



Research Product 99-04

Joint Targeting Planning Training Guide

December 1998

Advanced Training Methods Research Unit

U.S. Army Research Institute for the Behavioral and Social Sciences

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DTIC QUALITY INSPECTED 2

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**U.S. Army Research Institute
for the Behavioral and Social Sciences**

A Directorate of the U.S. Total Army Personnel Command

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Research accomplished under contract
for the Department of the Army

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REPORT DOCUMENTATION PAGE					
1. REPORT DATE (dd-mm-yy) December 1998		2. REPORT TYPE Final		3. DATES COVERED January 1997 to April 1998	
4. TITLE AND SUBTITLE: Joint Targeting Planning Training Guide				5a. CONTRACT OR GRANT NUMBER: DASW01-97-M-1218	
				5b. PROGRAM ELEMENT NUMBER 633007A	
6. AUTHOR(S) James F. Love (Consultant)				5c. PROJECT NUMBER A792	
				5d. TASK NUMBER 2129	
				5e. WORK UNIT NUMBER C02	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) James F. Love 317 James St. Falls Church, VA				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences 5001 Eisenhower Avenue Alexandria, VA 22333-5600				10. MONITOR ACRONYM ARI	
				11. MONITOR REPORT NUMBER Research Product 99-04	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT (Maximum 200 words): This guide resulted from an effort to develop a new approach to assessment and diagnostic training feedback in joint training. The guide resulted from a front-end analysis of joint targeting for an air campaign planning simulation. The analysis generated detailed training objectives, measurement instruments, and self-assessment procedures for each objective. For each phase of the joint targeting cycle, inputs, behavioral processes, and products were specified and incorporated in measurement tools. The measures were developmentally applied during Blue Flag 97-1. Blue Flag is a recurring cycle of air campaign planning exercises, managed by a numbered air force. Lessons learned from the application were combined with comments for Blue Flag participants to produce this joint training guide in its current form.					
15. SUBJECT TERMS Training, Learning, Instruction, Joint Training, Measurement, Assessment					
SECURITY CLASSIFICATION OF			19. LIMITATION OF ABSTRACT Unlimited	20. NUMBER OF PAGES 73	21. RESPONSIBLE PERSON (Name and Telephone Number) Dr. Angelo Mirabella (703) 617-0325
16. REPORT Unclassified	17. ABSTRACT Unclassified	18. THIS PAGE Unclassified			

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December 1998

Army Project Number
20363007A792

Manpower and Personnel

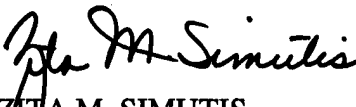
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FOREWORD

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) conducts research on how to design unit training strategies. Within the past few years, its mission has been extended to include inter service (multi and joint service) training. This document is one of a series of reports that have been produced under the Joint and Multi-Service Distributed Training Testbed (JMDT2) program. The purpose of the program has been to apply the basic concepts of instructional systems design (ISD) to the development and management of inter service training. A critical feature of ISD is assessment of training progress and remedial feedback. Assessment was the focus of the current effort.

This training guide is a result of developmentally adapting and applying ISD-based assessment methodology to joint targeting training. The test bed for the application was Blue Flag 97-1, a joint service air campaign training simulation conducted by the US Air Forces Central Command (CENTAF) Command, during February 1997 at Hurlburt Field, Florida. The guide, though tailored to that exercise provides a model for performing joint service task analyses and then converting those analyses into measures and procedures for use in self-assessment based after action reviews. The guide was well received by members of the Joint Force Air Component Commander's (JFACC) Air Operations Center; however, its contents are not endorsed by and do not represent official policy.

Publication of the guide is intended to serve two primary purposes. The publication will provide a record of progress in developing joint training assessment methodology. In addition it will provide a reference for future research on the methodology.


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ACKNOWLEDGMENTS

The author acknowledges with appreciation the assistance of many people who contributed to this training guide. Of particular note are Dr. Frank Moses and Dr. Angelo Mirabella of the U.S. Army Research Institute, who provided overall direction and guidance, as well as expert assistance in developing the self-assessment tools. I am also greatly indebted to Dan Dwyer and Randy Oser of the Naval Air Warfare Center Training Systems Division, who made major contributions to the development of self-assessment tools and the project as a whole.

This training guide could not have been developed without input from members of the Joint Air Operations Center (JAOC) which participated in Exercise Blue Flag 97-1. Their use of the earlier draft of this training guide, their critiques and recommendations on it, and the extra time and effort they put into improving the self-assessment tools have resulted in a much more effective and useful guide. A special debt of gratitude is owed to COL Neal Coyle, the Chief of Plans for the JAOC, who went out of his way to ensure the involvement of all the key players and who personally reviewed and made numerous corrections and additions to the earlier drafts of this training guide.

JOINT TARGETING PLANNING TRAINING GUIDE

EXECUTIVE SUMMARY

Research Requirement:

The overall requirement was to develop a new approach to joint training assessment along with supporting measurement tools for use in diagnostic training feedback.

Procedure:

The research test bed was provided by the Blue Flag 97-1 (CENTAF) exercise at Hurlburt Field, Florida, February, 1997. In preparation for that exercise, the JMDT2 (Joint and Multi-Service Distributed Training Testbed) personnel did a front-end analysis of tasks and functions involved in joint targeting. The analysis resulted in detailed training objectives, measurement instruments, and self-assessment procedures for each objective. For each phase of the joint targeting cycle, inputs, behavioral processes, and products were specified and reflected in the measurement tools. The measures focused on collective rather than individual performance and outcomes. They were applied by JMDT2 staff during Blue Flag 97-1. Lessons learned by the staff were combined with comments from Blue Flag participants to produce the joint training guide in its current version.

Findings:

The analyses performed by JMDT2 staff and the resulting guidebook provide models for how to adapt instructional systems design concepts for front-end analysis and training assessment to the needs of the joint training community.

Use of Findings:

The findings provided a foundation for extending the self-assessment training diagnosis approach to other operational settings, including Division Artillery Staff training and joint fires training for a corps joint task force (JTF). Following the February 1997 exercise at Hurlburt Field, the guide was used informally as a source document by 9th Air Force personnel for air campaign operations training.

JOINT TARGETING PLANNING TRAINING GUIDE

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JOINT TARGETING PLANNING TRAINING GUIDE

Introduction

General Heinz Guderian was a great student of the operational art. He developed "blitzkrieg" tactics, trained the German armored forces in their application, and masterminded the May 1940 campaign that defeated the French and British armies which were superior in numbers and quality of tanks and artillery to the Germans. In an address to students of the Kriegsakademie in Berlin, 1937, he had this to say about training:

"Wherever we are, we are always training: in our daily duties at the casernes, in formal training situations at our troop exercise areas, or in actual combat environments. Everything we do is training; and conversely, everything we don't do is training. Whether that training is teaching us good or bad habits depends largely on the steps we take to assess what it is we're doing, for what purpose we're doing it, and how well we're doing it." (Translated by the author from a plaque on the wall of the German General Staff College, Hamburg, Germany.)

The purpose of this training guide is to provide that assessment of "what it is we're doing, for what purpose we're doing it, and how well we're doing it" for training the Air Operations Center (AOC) in the planning processes for Joint Targeting.

This section of the guide describes the methodology used in determining what is to be trained and how to assess that training. The appendices describe in detail: the Joint Targeting Training Objectives; the functions, tasks, and responsibilities of the key cells and meetings which accomplish the planning processes; the self-assessment of how well the Joint Targeting Training Objectives were accomplished; and the self-assessment of how well each key cell and meeting accomplished its tasks.

Application of Methods to Commands other than CENTAF

The training objectives, tasks, standards, and tools for self-assessment of performance found in this document were specifically constructed for U.S. Air Forces Central Command's (CENTAF's) Air Operations Center (AOC). Designations for cells (e.g., DGAT, JGAT, NGAT) and general times for various meetings will differ for other commands.

Although commands other than CENTAF may have different names for similar activities and schedule events at different times, the functions and processes described in this document occur in every AOC. Other commands can readily adapt the information and methods found here to help evaluate their own joint targeting planning procedures.

Joint Targeting Training Objectives

Since there are no Joint Training Manuals which provide Joint Training Objectives for the Joint Targeting Process, and there are no corresponding performance assessment criteria, the Joint and Multi-Service Distributed Training Testbed (JMDT2), described in the foreword, produced this guide.

It is, at times, easy to confuse training objectives with missions, operations, processes, and tasks. Missions are given to a subordinate command from a higher level command. CINCs' missions, for example, are specified in the Joint Strategic Capabilities Plan (JSCAP). Operations and processes are found in doctrinal publications, in tactics, techniques, and procedures (TTPs) manuals, and in unit standard operating procedures (SOPs). Generic tasks are found in the Universal Joint Task List (UJTL) and in commands' Joint Mission Essential Task Lists (JMETLs). The UJTL operational tasks involved in planning joint targeting are shown below along side the joint targeting process derived from joint doctrinal and tactics, techniques, and procedures (TTP) publications.

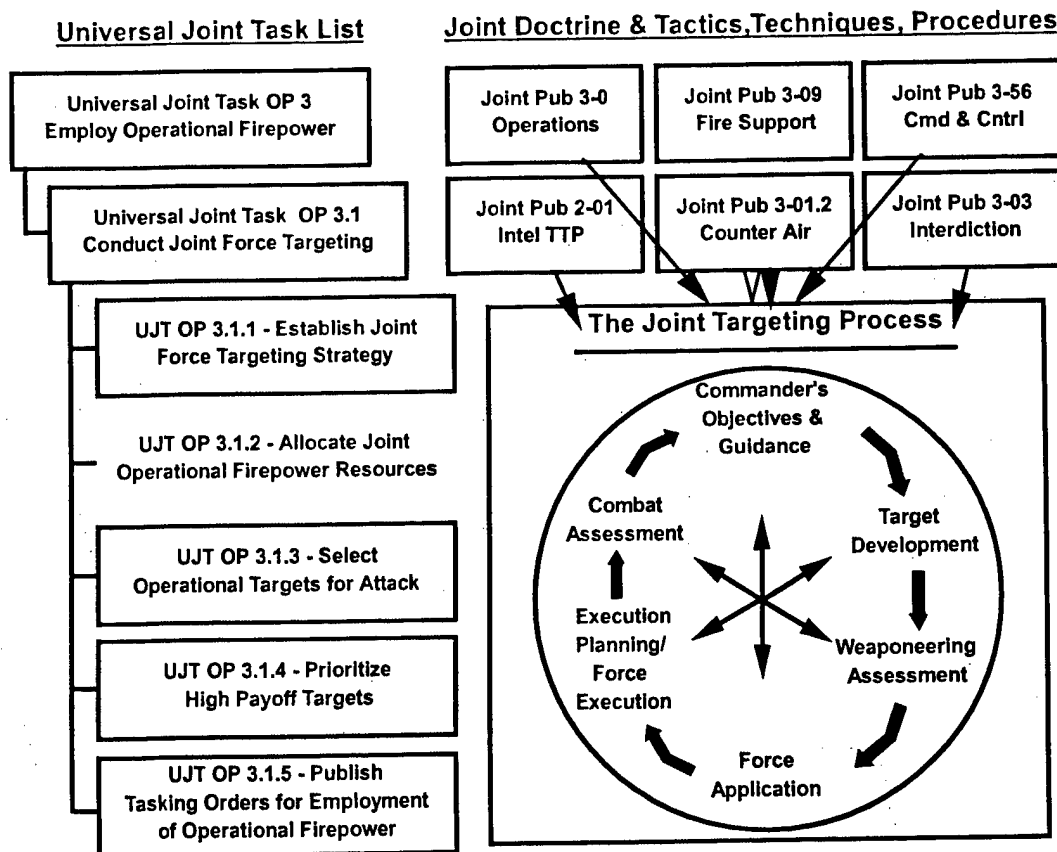


Figure 1. Tactics, techniques, and procedures for universal joint tasks.

The UJTL states what the task is; Joint Doctrine/TTP states how to do it; however, there is nothing that states how to train that task nor how to access that training. Therefore, subject matter experts (SMEs) familiar with the Joint Targeting Process and AOC operations conducted a detailed analysis of the documents shown above along with the pertinent missions, operations, processes, and tasks from the references shown in *Appendix E*. The SMEs developed detailed training objectives, that were determined to be process-oriented objectives with definable inputs to the process, tasks within the process, and outputs from the process.

The diagram at the right shows that the joint targeting process is composed of a number of interrelated and interactive sub-processes. Joint Targeting Training Objectives (JTTO) were developed to reflect these sub-processes. They are listed below. A more detailed explanation of each can be found in *Appendix A*.

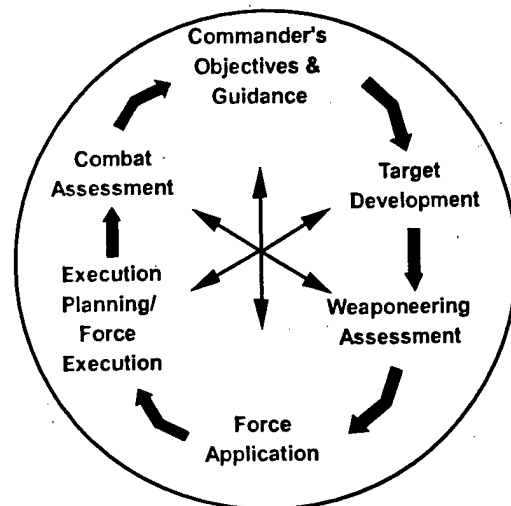


Figure 2. The Joint Targeting Process

JTTO 1. Demonstrate the ability to develop JFACC recommendations to JFC for commander's objectives and guidance.

JTTO 2. Demonstrate the ability to systematically and objectively evaluate potential target systems, individual targets, and the elements of each target in relation to the commander's objectives and guidance to include target validation, collection, and prioritization.

JTTO 3. Demonstrate the ability to provide effective weaponeeing assessment by producing various force application options for each target based upon desired results.

JTTO 4. Demonstrate the ability to effectively conduct force application procedures which fuse targets, weapons systems, and munitions into tactically sound and properly sequenced packages to accomplish JFC's guidance and intent.

JTTO 5. Demonstrate the ability to conduct execution planning and force execution.
[Note: This Joint Targeting Training Objective was not assessed by JMDT2 during Blue Flag 97-1. JMDT2's focus for this exercise was the planning process, not execution.]

JTTO 6. Demonstrate the ability to conduct combat assessment by developing plans to determine if the required effects on the enemy envisioned in the JFC's campaign plan are being achieved.

Key Cells Involved with the Joint Targeting Process

Air operations in support of the Joint Force Commander's campaign plan are in constant motion and involve integrating and synchronizing many different processes. While the targeting process is being worked, other major processes within the Air Operations Center, such as air lift, joint search and rescue, airspace management, aerial refueling, air defense, counter-air, close air support, suppression of enemy air defenses, electronic warfare, intelligence collection, and communications management, are being coordinated.

Within each of these major processes are coordination meetings, with key cells that come together at various times to perform key functions. For the planning functions within the joint targeting process, those key cells and meetings are listed below with a brief description of their main functions. *Appendix B* contains more detailed explanations for each.

Strategy Development Cell: develops JFACC's air operations strategy.
[JTTO 1]

Strategy Analysis Cell: assesses how well ATO execution is accomplishing JFACC's guidance. *[JTTO 6]*

JFACC Strategy/Guidance Meeting: develops JFACC recommendation to the JFC for commander's objectives, targeting guidance, and apportionment. *[JTTO 1]*

Day Guidance, Apportionment, and Targeting Cell (DGAT): prioritizes target nominations, ensures all components' target nominations are addressed and meet JFC/JFACC guidance. *[JTTO 2, JTTO 6]*

Joint Guidance, Apportionment, and Targeting (JGAT) Meeting: approves Joint Integrated Prioritized Target List (JIPTL). *[JTTO 1, JTTO 2, JTTO 6]*

Night Guidance, Apportionment, and Targeting Cell (NGAT): develops the Master Attack Plan (MAP). *[JTTO 3, JTTO 4, JTTO 5]*

ATO Production Team: tasks and schedules units to attack targets.
[JTTO 5]

Joint Targeting Assessment/Feedback

One of the major challenges to assessing training performance and giving meaningful feedback in the joint arena is finding the right people with the right expertise to conduct the assessment. At lower echelons, those personnel can be found in like units or in higher echelon units and can be tasked to perform assessment and feedback for other units' training exercises. For example, personnel from a similar wing can accomplish that task for another wing's training, or personnel from a wing can accomplish it for one of the wing's subordinate squadrons. However, at the joint level, this solution is highly improbable. For instance, even if CINCSOUTH could stand down key personnel from its staff sections and send them to a CINCCENT training exercise, the differences between the two commands' missions, forces, geography, political environments, and potential foes are such that it is doubtful these personnel would have the expertise necessary to provide effective assessment or meaningful feedback.

So, for a joint command, who does have that expertise? It is found among that command's own staff groups and teams. Therefore, the training performance measures and feedback methods contained in this guide were designed for self-assessment by personnel in the key cells and teams of the AOC involved in training the planning processes for joint targeting.

Although the Joint Targeting Training Objectives are process oriented, to perform the processes involves, to a large degree, the performance of military "art" based on collective judgment. This is something difficult to measure objectively. It was, therefore, necessary to derive mainly subjective performance measurement tools (i.e., measures and metrics). Training assessment procedures for two levels were considered necessary:

1. During actual combat or during training exercises, the JFACC staff provides self-assessment and feedback to the JFACC on how well the Air Operations Center is accomplishing the Joint Targeting Training Objectives. *[Note: Appendix C contains metrics for providing this assessment.]*
2. Each cell leader provides a self-assessment of how well his cell is accomplishing its tasks to the members of his cell. *[Note: Appendix D contains methods and self-assessment tools for each cell leader's use.]*

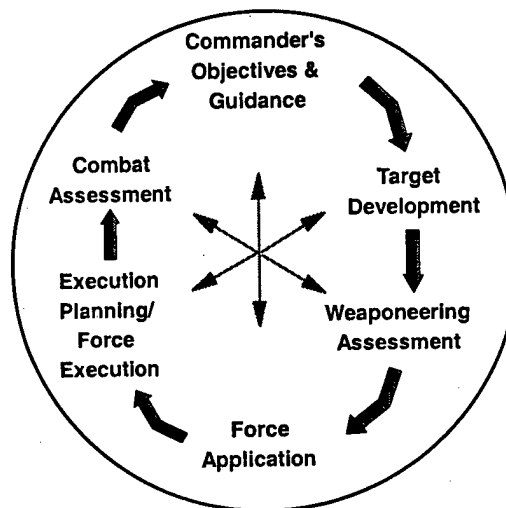
Appendix A

Joint Targeting Training Objectives (JTTOs) Descriptions

Exercise Objective for Joint Targeting: Train the JFACC, selected staff sections, and selected components of the Joint Air Operations Center (JAOC) in the joint targeting process.

The Joint Targeting Process:

The depiction to the right is a simple diagram of the joint targeting process. Although commonly referred to as a "cycle," the joint targeting process is really a continuous process of overlapping functions independent of a particular sequence. Joint targeting significantly affects the theater campaign as the JFC must synchronize targeting efforts throughout the Joint Force to ensure effective accomplishment of theater campaign objectives. Further complicating this is the fact that targeting occurs at all levels within a Joint Force by all forces capable of attacking targets. It must therefore be deconflicted, coordinated, and prioritized among components to ensure success.



The Joint Targeting Process

JTTO 1: Demonstrate the ability to develop JFACC recommendations to JFC for commander's objectives and guidance.

a. The JFC states his desired end-state and damage levels for specific periods of operation (his objectives). He sets targeting priorities, provides planning guidance, and determines the weight of effort for various operations (his "guidance"). Subordinate commanders recommend to the JFC how to use their combat power most effectively to achieve the JFC's objectives. Weight of effort for any aspect of joint targeting may be expressed in terms of percentage of total available resources, priorities for resources used with respect to the other aspects of the theater campaign, or as otherwise determined by the JFC. The JFC regularly consults with his staff and component commanders to assess the results of targeting efforts and to refine or change his guidance or objectives. A forum for this can be the Joint Target Coordination Board (JTCB).

b. The Strategy Development Cell develops long and short range air strategy by campaign phase based on JFC objectives and guidance. This in turn is used to prepare the apportionment recommendation that the JFACC approves before it is sent to the JFC for final approval.

JTTO 2: Demonstrate the ability to systematically and objectively evaluate potential target systems, individual targets, and the elements of each target in relation to the commander's objectives and guidance to include target validation, collection, and prioritization.

a. This part of the process is the systematic evaluation of potential target systems, individual targets, and the elements of each target in relation to the commander's objectives and guidance. This includes target validation, collection, and target list prioritization. Target development is an objective analysis conducted independently of munitions or platform availability.

b. Target development steps:

- (1) Establish information requirements
- (2) Identify potential target systems
- (3) Identify critical nodes and their activities and functions
- (4) Develop target system models and utility measures
- (5) Validate targets and "No-Hit" lists
- (6) Define production requirements (use of collection assets)

c. Target development inputs:

- (1) Operation Plan Joint Target List Annex (OPLAN JTL). For a given operational area, the OPLAN JTL constitutes a target baseline. OPLAN JTLs are subsets of the national military intelligence integrated data base/integrated data base (MIDS/IDB) modified to meet the joint force requirements in various regions throughout the world. During peacetime, the unified command J2 modifies this database via inputs from both national agencies as well as assigned component forces.
- (2) Battlespace Geometry Management. Intelligence planners assess the battlespace geometry/restrictions and develop targets based on regional and geographic characteristics.
- (3) All source national agency support
- (4) Enemy military capability studies
- (5) Current intelligence assessments
- (6) Component target nominations
- (7) Joint Targeting Coordination Board inputs
- (8) Existing basic encyclopedia (BE) numbered targets

- (9) JFC/JFACC guidance
- (10) Law of Armed Combat (LOAC) and Rules of Engagement (ROE) considerations

d. Target development outputs:

(1) Joint Target List (JTL). The operational JTL is the updated and refined OPLAN JTL, and serves as the initial list of campaign targets. The JTL is the master target list that supports the Joint Force Commander's (JFC) objectives, guidance, intent, and courses of action. It normally lists high-value targets (HVTs), which are later incorporated as high-payoff target (HPT) nominations during component wargaming. HVT lists are an analysis of what the enemy needs to accomplish his mission; HPT lists are those HVT items which also further the aims of the JFC's campaign plan. The JTL is not a prioritized list of targets, but contains prioritized target categories (e.g., command and control, airfields, lines of communication) listing specific targets. The JFC prioritizes the JTL target categories according to the campaign plan. This focuses the intelligence/target material production effort and provides guidance for the use of intel collection assets. Target information reports (TGTINFOREPs) from components update the JTL. Maintenance of the JTL is normally conducted by the JTCB or the JFC's staff.

(2) Joint Integrated Prioritized Target List (JIPTL). The JIPTL is a JFC level product usually produced by the JFACC's Joint Air Operation Center. It prioritizes each target's relative importance and significance within a specific target system as well as to all other targets. [*Note: Prioritization does not necessarily denote operational sequencing.*]

(3) Inputs to intelligence collection plan

(4) Restricted targets lists (targets not to be struck, or not to be engaged with certain systems)

(5) The intelligence preparation of the battlefield event template

(6) Established Target Selection Standards (TSS). Established TSS define what makes a target suitable for attack (i.e., when it can be attacked, where it can be attacked, what target activity triggers the attack, and what degree of accuracy is required to locate the target prior to the attack).

(7) Target information (general location, target type/category, common target/track number (CTN), specific location, disposition size, disposition, target speed and direction, surveyed target data, target identification specifics, and unit identification)

e. The joint force J2 supports target development with resources of the theater Joint Intelligence Center (JIC) at the geographic combatant command level, or the Joint

Intelligence Support Element (JISE), at the subordinate joint task force level. Component intelligence assets and intelligence organizations also contribute.

JTTO 3: Demonstrate the ability to provide effective weaponeering assessment by producing various force application options for each target based upon desired results.

a. **Weaponeering Assessment:** The purpose of the weaponeering assessment phase is to provide various force application options for each target based upon desired results. The process depends on detailed intelligence analysis of target construction and vulnerabilities combined with operational assessments of weapons effects and delivery parameters. Weaponeering assessment determines the quantity, type, and mix of lethal and nonlethal weapons required to produce a desired effect. It is an analysis of the best weapon combination for economy of force (the best bang for the buck). Timeliness is also a critical factor in weaponeering decisions. The short dwell nature of time-critical targets requires that the timely availability of an attack asset be an important factor in weapons selection.

b. Operational planners fuse the target and threat analysis with Joint Munitions Effectiveness Manual (JMEM) data and nonlethal effects in order to assess expected results. If desired destruction criteria will be met, and other factors are favorable (such as weapons and delivery system availability), a variety of options with weapons recommendations are assigned to each target on the JTL. Recommendations prescribe the amount and type of ordnance, as well as the number and type of delivery parameters to achieve desired effects.

(1) Lethal force weaponeering parameters include target vulnerability, weapons effects, aimpoint selection, delivery errors, weather, damage criteria, and weapon reliability.

(2) Nonlethal force weaponeering assessment is the assessment of the ability of friendly systems to observe activity, deceive, jam, affect (PSYOP), disrupt, or deny access to critical friendly targets. Nonlethal weaponeering is a significant part of command and control attack analysis conducted at the JFC level and by the command and control warfare (C2W) cell. This cell performs nonlethal targeting and weaponeering (effects and means) analysis to identify and match adversary C2 targets to friendly C2W and operational objectives.

c. Weaponeering assessment is not a prediction of results, but a statistical probability of weapons effects. It includes the detailed study and refinement of aimpoints, fuse delays, impact angles and velocities, weapons trajectories, number and type of weapons for employment (both air-to-surface and surface-to-surface), and recommended damage criteria. Weapons/munitions selection procedures vary depending on the assets of the component attacking the target, the nature of the target,

and the time available to engage the target. The result of weaponeering assessment is a probability of damage against each target with the recommended weapons required to achieve the required level of damage.

JTTO 4: Demonstrate the ability to effectively conduct force application procedures which fuse targets, weapons systems, and munitions into tactically sound and properly sequenced packages to accomplish the JFC's guidance and intent.

a. **Force Application.** Force application is the selection of lethal or nonlethal forces for the mission. It integrates previous phases in the cycle and fuses weaponeering assessment with available forces. Intelligence and operations staffs work closely to optimize the force necessary to achieve the objective considering operational realities and available assets. Based on JFC guidance, planners conduct force application planning to fuse target, weapons system, munitions, and nonlethal options.

b. The primary objective of force application is to sequence target attacks and synchronize the application of lethal and nonlethal force.

c. During force application, the components identify primary resources to execute missions and supporting requirements. Planners accomplish force packaging and task organization, and they may group various targets based on geographic location to facilitate economy of force and unity of effort. Likewise, a relatively high priority target may go unserved because of situational factors that render the target too force intensive or too risky to execute at the desired time.

d. Planners receive updated threat analyses for intended targets, including both air and ground threats en route to targets. If the threat is too high for successful mission accomplishment, the target is reevaluated for either a different weapons system to attack it or postponement of the attack until the threat is diminished. In either case, accurate intelligence assessment is a critical aspect of the force application process.

e. The key products from the force application phase are the Master Attack Plan (the Air Tasking Order (ATO) shell) for the air effort and the Attack Guidance Matrix (AGM) for the ground effort.

JTTO 5: Demonstrate the ability to conduct execution planning and force execution.
[Note: There are no self-assessment tools for this Joint Targeting Training Objective, since the focus for this manual is the planning process, not execution.]

a. **Execution Planning/Force Execution.** The JFC issues mission type orders directing commanders to execute operations. Component commanders and their staffs conduct mission planning.

b. **Execution Planning.** The ATO and AGM guide the personnel in the Air Operations Center in their preparation of schedules, missions, route planning, and tactics to execute attacks. Due to inevitable changes in the enemy situation (and thereby in the assumptions used in the force application phase), intelligence and operations cells analyze the ATO and AGM to validate whether or not they accurately address the current enemy situation. This analysis and validation process is a continuous function throughout execution planning. Intelligence preparation of the battlefield (IPB) procedures are used for time-critical targets (TCTs) and identify the probable locations where and times when TCTs may emerge. This allows execution planners to position target acquisition and strike assets to best respond to the forecasted areas. During execution planning, intel cells monitor target status and provide updates to current taskings as well as to the follow-on target development and weaponizing phases.

c. **Force Execution.** The combat operations section in the Air Operations Center monitors the execution of the ATO and provides real-time redirection of assets, re-attacks, and other taskings as the situation warrants. Mission execution requires the flexibility to impact unforeseen TCTs, which in turn requires a well thought-out intel collection plan.

JTTO 6: Demonstrate the ability to conduct combat assessment by developing plans to determine if the required effects on the enemy envisioned in the JFC's campaign plan are being achieved.

a. **Combat Assessment (CA).** CA directly affects all other phases of the Joint Targeting Process. CA is the determination of the overall effectiveness of force employment during military operations. Its purpose is to determine if the required effects on the enemy envisioned in the campaign plan are being achieved by the components to meet the JFC's overall concept.

b. CA answers three questions. Were the operational and tactical objectives met by force employment? Did the forces employed perform as expected? What's needed to fix any discrepancies?

c. The JFC is responsible for establishing a dynamic system to support combat assessment for all other joint force components. The joint force J3, assisted by the J2, is responsible for coordinating CA.

d. Intel supports CA by providing objective assessments on the overall impact of military operations against enemy forces, possible enemy courses of action, and predictions of enemy intent. Input to these assessments include mission reports (MISREPS), aircraft inflight reports (INFLTREPS), intelligence summaries (INTSUMS), reconnaissance reports, national systems, and reports from joint reconnaissance,

surveillance and target acquisition (RSTA) systems. CA includes battle damage assessment (BDA), munitions effectiveness assessments (MEAs), and re-attack recommendations (RRs).

e. **BDA.** Battle damage assessment attempts to determine the impact of operations against individual targets and target systems. BDA is the estimate of physical, functional, and target system damage resulting from the application of military force, either lethal or nonlethal, against a predetermined objective. Although primarily an intelligence responsibility, accurate BDA depends on the coordination and integration between operations and intel. BDA uses all source intel assets to assess target damage and response. During each phase of the BDA process, determinations are made on what adjustments, if any, are required in other phases of the Joint Targeting Process.

(1) Phase I BDA - Initial. This phase is the initial analysis, based primarily on visual observation of the target and usually derived from a single source. Inputs come from aircrew debriefs and mission reports (MISREPS), weapon system video, manned and unmanned imagery reconnaissance, and other classified sources. The unit controlling the attack asset develops Phase I BDA. Reports state whether a target was hit or missed and include initial estimates of damage.

(2) Phase II BDA - Supplemental. This phase reviews all Phase I damage assessments and amplifies the initial analysis. Phase II draws on all source intel and operational data to determine functional damage to a target and an estimate of impact on the target system. This phase requires the integration of theater and national source information. The theater joint intelligence center (JIC) has access to these sources and provides significant support. Signals intelligence (SIGINT), imagery intelligence (IMINT), and measurement and signature intelligence (MASINT) sources are used.

(3) Phase III BDA - Target System Assessment. This phase is primarily performed in large-scale operations. It produces a target system assessment by fusing all supplemental BDA with the experience of subject matter experts. The bottom line question during Phase III is, "How successful have our efforts been to degrade or deprive the enemy's warfighting capabilities?"

f. **MEA.** Munitions effectiveness assessment provides feedback on how well ordnance, tactics, weapons systems, and platforms performed in combat. MEA is conducted concurrently and interactively with BDA to evaluate ordnance, weapon system, and tactics performance and continues over an extended period of time beyond the BDA process. MEA evaluates weapons parameters such as delivery accuracy, fusing, and damage mechanisms (blast, fragmentation, and penetration). Analysts identify deficiencies and make recommendations for procedural changes, different tactics, or system modifications.

g. **RR.** The re-attack recommendation is a combined operations and intelligence function which develops recommendations on which targets may require re-attack. This is based upon the enemy's remaining capability, capacity, and potential for recuperation. The RR process attempts to solve deficiencies identified during the BDA and MEA processes. Reassessment of objectives, target selection, vulnerabilities, timing, tactics, weapons, and munitions factors into the new recommendations. RR are passed back into the Joint Targeting Process at the target development, force application, and execution planning/force execution phases. Significant RR would "re-start" the targeting process with development of new commander's objectives and guidance.

Appendix B

Key Cells and Meetings for the Joint Targeting Process

Strategy Development Cell. For the joint targeting process, this cell is responsible for:

1. Developing and refining the JFACC's air strategy for employing all available theater aerospace forces to accomplish or support the theater objectives established by the JFC. [JTTO 1]
2. Developing and refining air objectives, prioritized tasks, and measures of merit (MOMs) for each campaign phase. [JTTO 1]
3. Coordinating with other components as to forthcoming operations that require air support or may effect the JFACC's long range strategy. [JTTO 1]
4. In cooperation with the Information Warfare (IW) Cell, incorporate available IW capabilities into the JFACC's air strategy. [JTTO 1]

Strategy Analysis Cell. For the joint targeting process, this cell is responsible for monitoring the accomplishment of the JFACC's air operations plan objectives by phase and for recommending courses of action to the Strategy Development Cell to accomplish JFACC assigned tasks. It tracks phase objectives/milestones and the general tempo of combat. This includes coordination with the GAT Branch Combat Assessment Cell to obtain an overall assessment of success in achieving JFACC assigned tasks. [JTTO 6, JTTO 1]

JFACC Strategy/Guidance Meeting. This important meeting is normally held in the morning (approximately 0800) and is attended by the JFACC and his staff, by key personnel from Combat Plans, Combat Ops, and Combat Intel, and by component/liaison representatives. Many items that do not directly relate to the joint targeting process are covered in this session. Those that do concern joint targeting are as follows.

1. The DGAT presents its recommendation for near-term guidance, apportionment, and targeting. [JTTO 1] The meeting participants discuss and resolve any issues prior to JFACC approval (issued in the form of the JFACC Guidance Letter and Apportionment Recommendation).
2. The Strategy Development Cell presents its recommendation for long-range (3-4 days out) air strategy and targeting priorities as JFACC inputs to the Joint Targeting Coordination Board (JTCCB). [JTTO 1]

Day Guidance, Apportionment, and Targeting Cell (DGAT).

1. The DGAT is composed of planners from Combat Plans, Combat Intelligence and component representatives. It meets in the morning (approximately 0600-1200). It is responsible for developing the daily JFACC's planning guidance and apportionment recommendation based on the Strategy Development Cell's prioritized tasks. It produces the ATO Planning Guidance Letter which details the JFACC's basic daily campaign objectives and includes: the effective period for the ATO; daily assessments, objectives, and priorities of effort; generalized targeting philosophies, objectives, and apportionment and allocation guidance; and guidance for use of critical and specialized assets and planning of specialized operations. *[JTTO 1]*

2. The DGAT is also responsible for finalizing the daily prioritized Joint Target List (JTL). *[JTTO 2]* The process for accomplishing this is conducted by the DGAT during the **Joint Targeting Working Group (JTWG)** session (approximately 1300) as follows:

Step 1. Candidate Target Lists (CTLs) submitted by components are compiled based on mission type (e.g., offensive counter air (OCA), air interdiction (AI), close air support (CAS), etc.).

Step 2. The DGAT's targeting element located in the Combat Intelligence Division SCIF prioritize targets within each mission type according to which task they fall under. For each target, Desired Mean Points of Impact (DMPIs) are selected, and Target Planning Worksheets are generated. Additionally, each target is checked against the No-Hit List and Restricted Target List. If the target type or DMPI is on one of these lists, the targeting element contacts the Joint Force J-2 Cell to determine the reason for the restriction, and if necessary to request exception for that target.

Step 3. The JTWG reviews the JFAAC's guidance and checks each target to ensure compliance with that guidance. Based on these checks, some targets are thrown out.

Step 4. With participation from representatives of all components, the JTWG in a group effort prioritizes targets within each target type based on JFAAC priority of tasks.

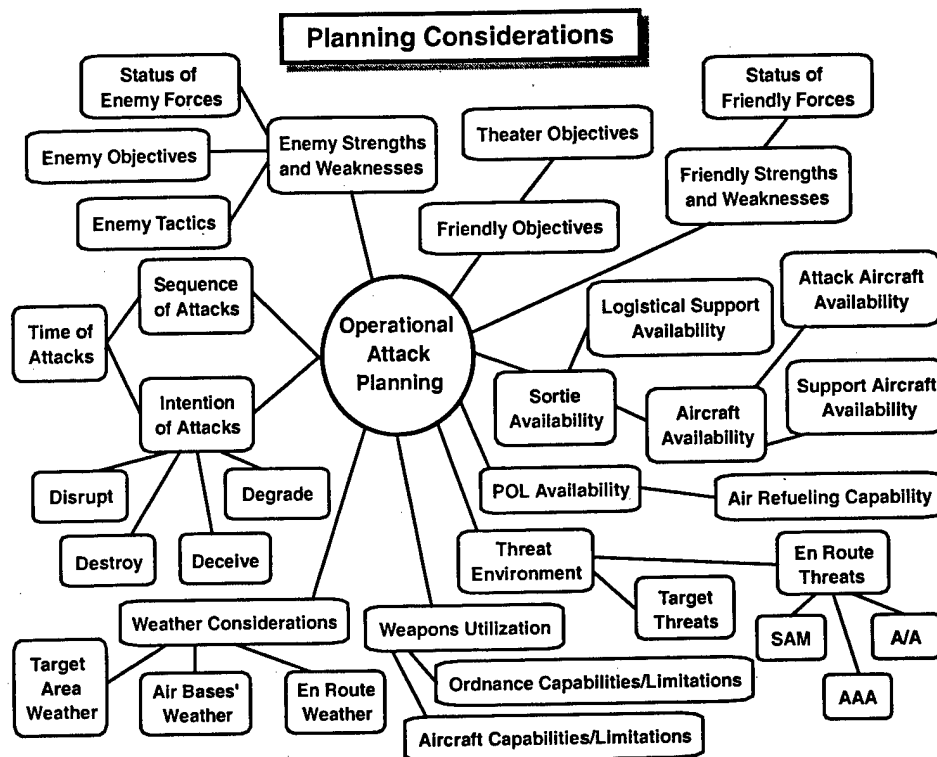
Step 5. The resulting Draft Target Nomination List (TNL) is submitted to the JGAT for approval and subsequent NGAT processing. *[Note: The TNL is referred to as the Joint Integrated Prioritized Target List (JIPTL) at Joint Force levels.]*

JGAT (Joint Guidance, Apportionment, and Targeting) Meeting. The JGAT Meeting is held at approximately 1500 hours, and is attended by O-6/O-5/O-4 level planners from Combat Plans, Combat Intelligence, and the components.

1. One of the major purposes of the meeting is to make final refinements to the Draft TNL received from the DGAT and to submit it to the JFACC at his afternoon update (approximately 1700 hours). The JFACC may require further refinements to be made prior to forwarding the TNL to the NGAT. *[JTTO 2]*
2. The other major purpose of this meeting is for the Strategy Development Cell to present the long-range (3-4 days out) air strategy for discussion and refinement by the JGAT personnel prior to presenting it to the JFACC for approval at his afternoon update (approximately 1700 hours). *[JTTO 1]*

Night Guidance, Apportionment, and Targeting Cell (NGAT).

1. The NGAT is made up of personnel from Combat Plans, Combat Intelligence, and weapons and tactics officers, current in the available USAF, USMC, USN, and coalition fighter aircraft. Other participants include electronic warfare officers current in the electronic combat (EC) employment of available EC assets, component specialists to include Battlefield Coordination Detachment (BCD) personnel and Special Operations Forces (SOF) experts, and targeteers and intel specialists.
2. The NGAT takes the TNL with its target planning worksheets received from the JGAT and develops the JFACC's Master Attack Plan (MAP) in accordance with the JFACC's guidance and apportionment recommendations. *[JTTO 2, JTTO 3, JTTO 4]*
3. **The Master Attack Plan (MAP).** Developing this plan to produce an effective Air Tasking Order requires the "art" involved in air operations. All the representatives to the NGAT provide the operational and tactical expertise to sequence and deconflict apportioned air assets against the prioritized TNL. These assets must be placed into effective combat packages based on threats and desired level of destruction. The diagram below displays some of the key considerations the NGAT must take into account in their operational attack planning.



4. The MAP Process. Developing the Master Attack Plan is an iterative process involving constant revision as planners work into the plan the items in the diagram above. The steps of the process shown below represent a general sequence or flow of tasks. However, continuous revisions are necessary and will involve the repetition of certain steps, which may be out of sequence with what is shown below.

Step 1. The NGAT begins its work with a review of the JFAAC's guidance and the targeting strategy used in developing the TNL.

Step 2. The targeteers from Combat Intelligence accomplish target weaponeering by developing Desired Mean Points of Impact (DMPIs) for each target. To assist them in this process, they use the Rapid Application of Air Power (RAAP) computer program, which is one of the applications in the Contingency Theater Automated Planning System (CTAPS). With that and the Joint Munitions Effectiveness Manuals (JMEM), DMPIs with weaponeering options (type of aircraft plus bomb loads) that accomplish the desired level of damage or destruction are determined for each target. As much flexibility as possible is developed for each target, with weaponeers trying to give as many options for weapons and type aircraft required as possible. For example, a target might have 3 desired mean points of impact using bomb type X or 1 DMPI using bomb type Y; or the nature of the target might be such that it requires a specific type of aircraft to deliver the proper amount of destruction. In any case, the purpose of weaponeering is to provide an analysis of the best weapon combination for an economy

of force, or the "best bang for the buck." Weaponeers also quantify expected results of the weapons (lethal or nonlethal) against each target, producing a probability of damage (PD).

Step 3. The NGAT applies the JFC's apportionment guidance to the TNL. Apportionment is normally stated as a percentage of available air assets, but may be reflected as number of sorties. However stated, apportionment percentages or numbers should contain a "plus-or-minus" component to give planners flexibility (not tie them to exact numbers). For example, apportionment by number of sorties might be stated: "OCA=250, DCA=100, AI=600, CAS=300; plus or minus 10 sorties." Experienced NGAT planners will ensure that all assets are spread among target types according to the guidance. They must take care that multi-purpose aircraft (e.g., F-16s) are not fully tasked for OCA or AI missions, but are also used for CAS and Defensive Counter Air (DCA) missions if needed. At some point when all assets have been committed, a "cut-off line" is made for each target type, and more detailed weaponeering is accomplished for each target above the cut-off and for the first 5 targets just below the line. As the MAP iterative process is worked, some of the targets above the line may drop out, and some below may be pulled up. Those targets that do not make the cut on this ATO will be worked into the next ATO.

Step 4. Next the true "art" of developing an ATO begins. Each of the targets with their desired mean points of impact (DMPs) are plotted on a map board. The NGAT operations experts then draw circles around groups of targets that can be "packaged" and attacked by a large single force of aircraft. By packaging targets together, the attacking aircraft can take advantage of mutual support with one another and optimize the effectiveness of electronic support aircraft (e.g., radar jammers, Wild Weasels) and DCA aircraft. This packaging is first accomplished without regard to which targets have the higher priorities. Packages are based on the geographic locations of the targets, so a typical package will contain a mix of high and low priority targets. It is common in this process to find an isolated target that is at a distance and direction too far apart from any other targets to logically place it into a package (a target outside the circles). NGAT planners must then determine the priority of that target, and if extremely high, they will try to find a source not requiring mutual support. However, high priority targets may go unserved during this particular ATO execution, because the target requires too many assets in relation to its value. The rationale for dropping these targets will be explained to the JFACC at his morning briefing and then worked into the next ATO.

Step 5. Aircraft types are assigned to each package and the targets within each package. Although not a hard and fast rule, planners try not to mix assigned aircraft by type or service or nation. For some packages, this may not be possible, and liaison personnel work with the planners to ensure that all the information necessary to coordinate the mixed attack package is contained in the ATO SPINS (Special Instructions, the "remarks section" of the ATO). Also, a running "bean count" of aircraft type is kept; for example, "we just ran out of F-15Es." This may cause a reworking of the packages.

Step 6. Concurrent with the properly servicing of targets and assigning of aircraft type to ensure that all assets are effectively used, the NGAT sequences the packages into an order that makes tactical sense. For example, a package that targets SAM sites would be flown before the package that hits the targets that the SAMs are protecting. Sequencing may cause planners to rework their target packaging. Eventually, through many iterations, all available aircraft are scheduled. During this time special missions and reconnaissance missions are built into the flow.

Step 7. Airspace planners are busy with the Airspace Control Plan. With the Master Attack Plan process nearing completion, they know *who* needs to go *where* in the airspace and can build the appropriate airspace control measures (routes, etc.) to make it all flow together. Similarly, the communications plan for airborne assets is also done at this time.

Step 8. As dawn approaches, the MAP, the DCA plan, the airspace control plan, and the communication plan are finalized, and the MAP is briefed to the JFACC. With his approval, the MAP is handed off to the ATO Production Team.

ATO Production Team. As yet, no units have been tasked. If possible, the units receive the MAP at the same time the ATO Production Team (a separate cell in the AOC) receives it, so that the units can get an initial look at their possible taskings and can start their own planning process. However, it is the ATO Production Team that takes the MAP from the NGAT and produces the ATO which assigns units their missions. ATO planners use the Advanced Planning System (another application of CTAPS) to marry up MAP information with aircraft unit scheduling, tanker requirements, and airlift requirements. Whenever possible, ATO planners are on line to the units while building the ATO to ensure the units understand the taskings they are about to receive. The questions the planner receives from the unit often prompt additional SPINS that are added to the end of the ATO to clarify the intent of certain taskings or provide required extra information. Concurrently, airspace planners produce the Airspace Control Order (ACO) for that ATO. Once the ATO and ACO receive their final review by the Director of Combat Plans, they are transmitted to the units. This normally occurs 12 hours prior to the first time-on-target for that ATO. Also, at that time, the ATO is handed over to the Combat Operations side of the AOC so they can prepare for transition from the previous ATO. [JTTO 5]

Appendix C

Joint Targeting Process Assessment Presentation to JFACC

Task: Provide the JFACC a daily assessment of how well his Air Operations Center is accomplishing the Joint Targeting Training Objectives.

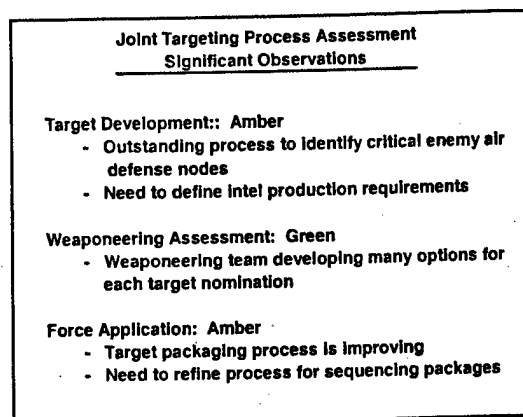
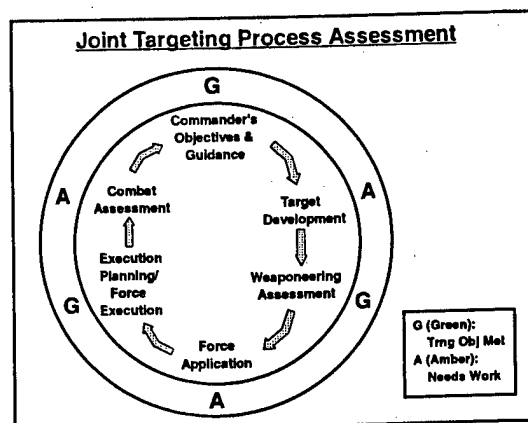
1. The Chief of Combat Plans will present this assessment during the senior officer afternoon debrief. The observations will cover the 24-hour period between these debriefs. The presentation will be of short duration (2-4 minutes unless the JFACC desires further discussion) and will be general in nature, covering only significant observations for JFACC consideration. The assessment will be based on inputs from each cell using that cell's self-assessment tools.

2. The two full-sized colored charts on the following pages are examples of what may be covered in the debrief. They are shown in miniature on the right side of this page.

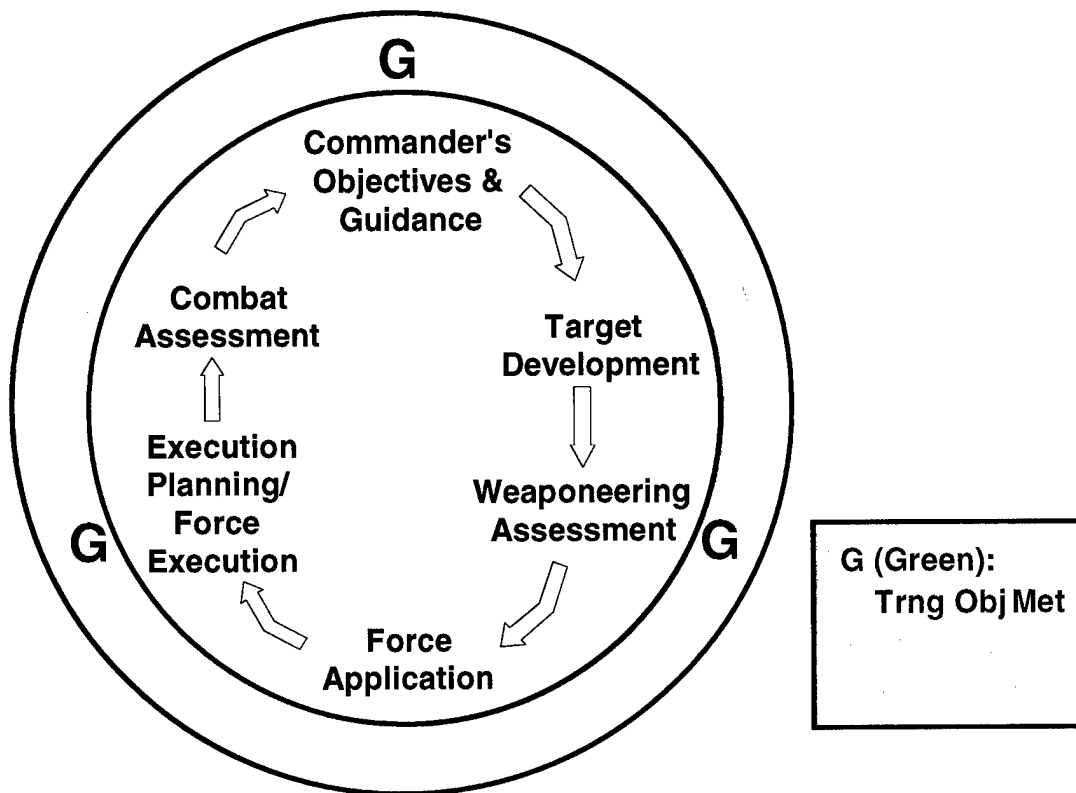
a. The first chart shows the overall assessment for each of the 6 Joint Targeting Training Objectives (JTTOs). Around the familiar Joint Targeting Process diagram, a rating of either "Green" or "Amber" will be given. Green denotes that the JTTO was met. Amber denotes that additional work is needed to meet the JTTO.

b. The second chart is used to present observations that the Chief of Combat Plans believes are of significance to the JFACC. All "Amber" JTTOs on the first chart will be addressed on the second chart; however, significant progress or other worthwhile observations for "Green" JTTOs will also be presented.

c. Another chart may be developed as needed to address any issues brought up in previous senior officer afternoon debriefs.



Joint Targeting Process Assessment



Joint Targeting Process Assessment Significant Observations

Target Development:: Amber

- Outstanding process to identify critical enemy air defense nodes
- Need to define intel production requirements

Weaponneering Assessment: Green

- Weaponneering team developing many options for each target nomination

Force Application: Amber

- Target packaging process is improving
- Need to refine process for sequencing packages

Appendix D

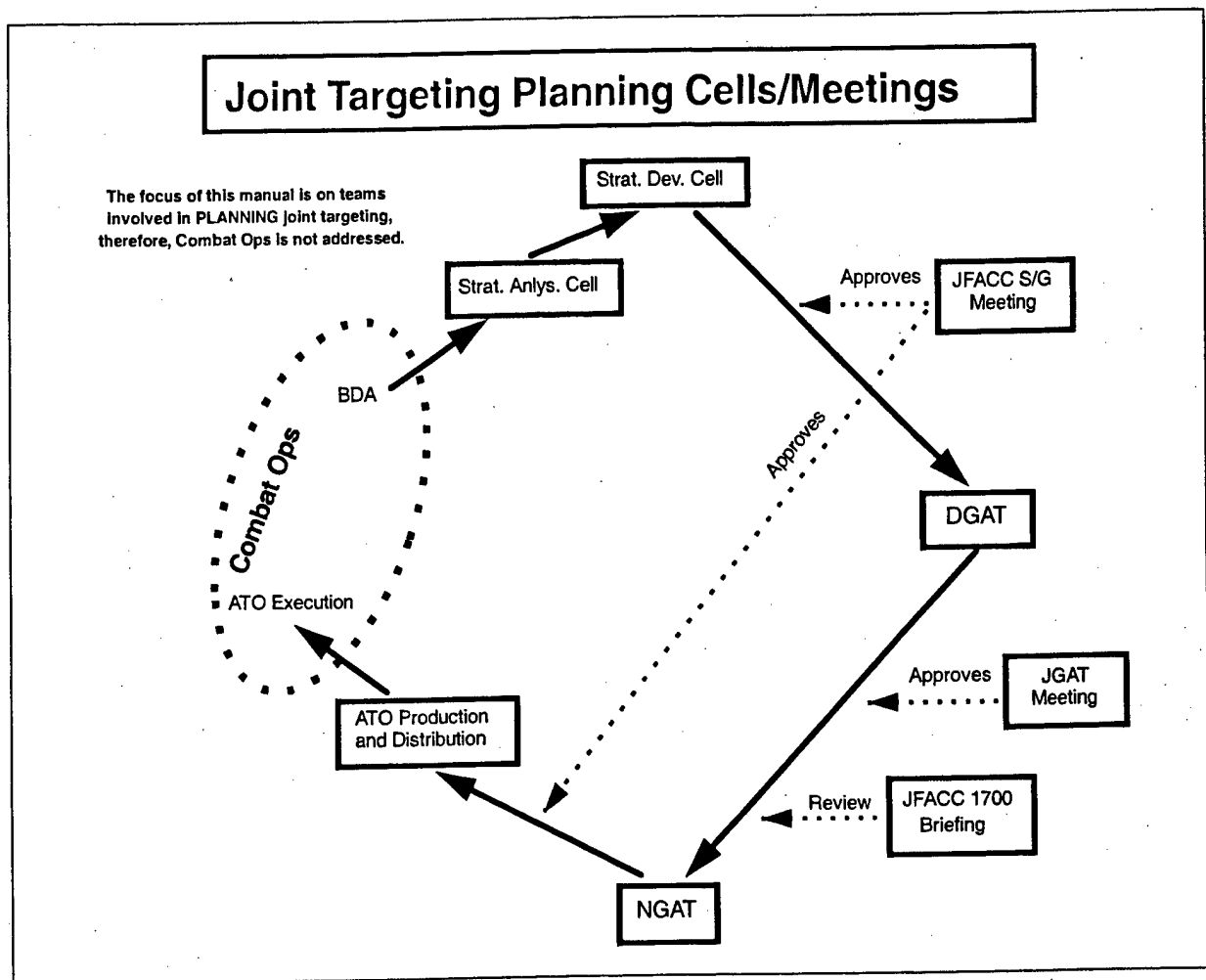
Joint Targeting Process Assessment for Key Cells/Meetings

Cell/Meeting Leader Tasks:

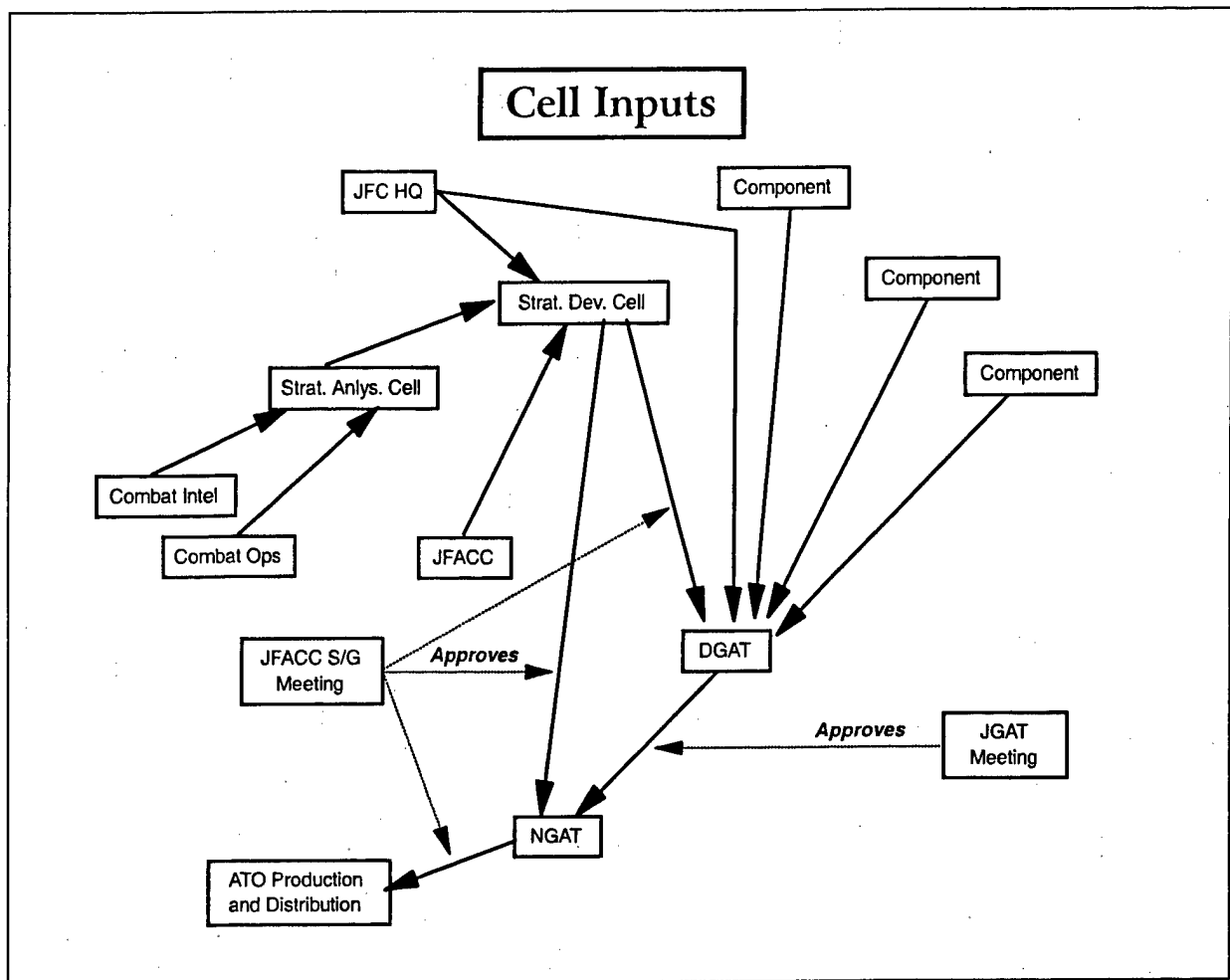
1. Each cell/meeting leader assesses how well his cell or meeting is accomplishing its tasks.
2. Each cell/meeting leader, using the methods and performance measurement tools (i.e., metrics and measures) from this appendix, provides feedback on his assessment to the participants in his cell or meeting.
3. These cells/meetings are displayed graphically on the next two pages.

Self-Assessment Tools for Key Cells/Meetings: The methods for each cell/meeting leader to assess his group's performance and provide feedback to them are found in the following sections of this appendix.

a. Strategy Development Cell	Section 1	(Page D-1-1)
b. Strategy Analysis Cell	Section 2	(Page D-2-1)
c. JFACC Strategy/Guidance Meeting	Section 3	(Page D-3-1)
d. DGAT	Section 4	(Page D-4-1)
e. JGAT	Section 5	(Page D-5-1)
f. NGAT	Section 6	(Page D-6-1)



The diagram above shows graphically the interaction and relationships of the key cells and meetings.



The diagram above provides a graphic representation of the inputs to each of the key cells and meetings.

Section 1 to Appendix D

Self-Assessment Tool for the Strategy Development Cell

Strategy Development Cell Responsibilities.

1. Developing and refining the JFACC's air strategy for employing all available theater aerospace forces to accomplish or support the theater objectives established by the JFC. *[JTTO 1]*
2. Developing and refining air objectives, prioritized tasks, and measures of merit (MOMs) for each campaign phase. *[JTTO 1]*
3. Coordinating with other components as to forthcoming operations that require air support or may effect the JFACC's long range strategy. *[JTTO 1]*
4. In cooperation with the Information Warfare (IW) Cell, incorporate available IW capabilities into the JFACC's air strategy. *[JTTO 1]*

Inputs to the Process:

1. From the Joint Force Commander and his staff (to include Joint Targeting Coordination Board):
 - a. JFC OPLAN or OPORD which contains assigned forces and explains JFC's mission, intent, campaign plan and its phases.
 - b. JFC stated objectives, desired end state, and damage level for specific periods of operation.
 - c. Targeting priorities, targeting planning guidance, and weight of effort for various operations (apportionment).
 - d. JFACC planning guidance.
2. From the Strategy Analysis Cell:
 - a. By phase appraisals of objectives and milestones accomplished or the degree necessary yet to be accomplished.
 - b. Combat assessment of target sets previously attacked.

Process:

1. Planners discuss Joint Force inputs which are normally general in nature and perform mission analysis to focus them into specific objectives with measurable results.
2. General levels of resources are displayed graphically over time in order to plan air operations to support JFC's campaign plan phases.
3. Alternative strategies/courses of action are "wargamed" and discussed, weighing the pros and cons of each, then selecting the strategy best able to fulfill the JFC's guidance.

Outputs:

1. Prioritized JFACC objectives or tasks.
2. Measures of Merit (MOMs), which give measurable results of each objective or task.
3. JFACC priorities of effort, targeting priorities by task, and JFACC philosophies.
4. Long range (3-4 days out) strategy by campaign phase.
5. Short range (1-2 days out) strategy by campaign phase.
6. Apportionment and allocation guidance.
7. Guidance for use of critical and specialized assets.

Questions to Ask Yourself:

1. How well was the cell organized and how well did they work together?
2. Have all relevant inputs been collected? Are they understandable and do they make operational sense? If not, has clarification been sought? From where?
3. In producing these outputs for the JFACC have we violated any doctrinal principles of warfare?
4. Have clarifications/discussions occurred regularly with JFC planners to obtain additional information and to bounce developing strategies off them for their ideas?
5. Were alternative solutions developed? ...pros and cons discussed? Was the rationale for final solution sound?

6. Were there any major conflicts or differences of opinion while developing the outputs? Were they thoroughly discussed? ...resolved?
7. Have all expected outputs been developed? How well (quality)? Were they developed in a timely manner?
8. Is each output consistent with JFC's guidance and intent?
9. Have outputs been briefed to appropriate personnel and approved by JFACC? Did JFACC refine or change cell's recommendations? How were these refinements/changes handled?
10. Have outputs been disseminated to all who need them? How do you know (to whom, by what means)?

Use of Self-Assessment Forms

1. The following two forms are to be used by the cell/meeting leader and each member of the cell or meeting to assess performance at the conclusion of each cell/meeting iteration.
2. The first form is a matrix which members are to fill out using the scale in the upper left hand block to rate performance. The second form provides ready access of key information needed to fill out specific assessment items.

Strategy Development Cell

ATO _____ Date: _____ Time: _____

SCALE	
5	Outstanding
4	Commendable
3	Satisfactory
2	Moderate opportunity for improvement
1	Significant opportunity for improvement
N/A	Not applicable
U	Unknown

Assessment		When developed or when changed.						
		Products/Outputs	Prioritized JFACC Objectives/Tasks	Measures of Merit (MOMs)	JFACC effort/targeting priorities	Long range strategy by phase	Short range strategy by phase	Apportionment/allocation guidance
		A	B	C	D	E	F	G
1	Used available inputs/ documents?							
2	Appropriate cells (external/ internal) consulted?							
3	Key personnel present? If not, how well did leaders compensate?							
4								
5	Did key personnel provide relevant input? How well did leaders draw out needed input?							
6								
7	Adhered to doctrinal principles?							
8	Sufficiently discussed?							
9	Alternatives addressed?							
10	Differences resolved?							
11	Consistent with Cmdr's guidance?							
12	Timeliness of production?							
13	Quality of product/output?							
14								
15								
16	If JFACC does not approve products, how well were refinements/changes made?							
17	Products/outputs distributed to all appropriate recipients? ___ Yes ___ No System in place to ensure distribution took place?							
18	Overall Assessment of Processes Performed							

Comments:

STRATEGY DEVELOPMENT CELL

ATO: _____ Date: _____ Time: _____

**Assessm't
Item**

Scoring Guidance

- | | | | |
|-----------|--|--|---|
| 1 | Available Inputs/Documents (examples): | <ul style="list-style-type: none"> From JFACC From JFC OPLAN/OPORD | <ul style="list-style-type: none"> From JFACC From Strategy Analysis Cell |
| | ⇒ Assigned Forces | | ⇒ JFACC planning guidance |
| | ⇒ Joint force mission | | ⇒ JFACC intent |
| | ⇒ JFC's intent | | |
| | ⇒ Joint force campaign plan with phases | | ⇒ By phase appraisals of objectives & milestones accomplished |
| | ⇒ Target planning guidance/priorities | | ⇒ Combat assessment of targets previously attacked |
| | ⇒ Weight of effort by phase (apportionment) | | |
| 2 | Assess whether the cell members consult with the appropriate cells or personnel if, in the information the cell is working with, there are discrepancies, clarifications needed, etc. | | |
| 3 | Key Personnel: | | |
| | <ul style="list-style-type: none"> Operational Intelligence Planner Command and Control Planning Officer Chief of Combat Plans | <ul style="list-style-type: none"> Fighter Planning Officer Special Support Planning Officer Airlift Planning Officer | |
| 4 | Observe whether the cell leaders or members use explicit methods to compensate for the lack of expertise in an area. | | |
| 5 | Observe the degree to which experts in an area provide information in <u>their own</u> area of expertise, as appropriate. | | |
| 6 | If members are not contributing as they should, observe whether the cell leaders use explicit methods (e.g., asking questions) to elicit the required input. | | |
| 13 | Quality of Product: Provide a global assessment of the product/output. Consider ratings made in the above assessments in addition to other judgments deemed relevant. | | |
| Blank Row | Add other relevant assessment criterion. | | |
| General | Satisfactory ratings (3) indicate that no mistakes were made and that the expected performance was obtained (i.e., tasking was met). Ratings above satisfactory indicate innovative or creative approaches were observed in the cell members or leaders. | | |

Comments:

Section 2 to Appendix D

Self-Assessment Tool for the Strategy Analysis Cell

Strategy Analysis Cell Responsibilities.

1. Monitoring the accomplishment of the JFACC's air operations plan objectives by phase. *[JTTO 6]*
2. Track phase objectives/milestones and the general tempo of combat. This includes coordination with the GAT Branch Combat Assessment Cell to obtain an overall assessment of success in achieving JFACC assigned tasks. *[JTTO 6]*
3. Recommending courses of action to the Strategy Development Cell to accomplish JFACC assigned tasks. *[JTTO 1]*

Inputs:

1. From Combat Intel: bomb damage assessments (BDA), munitions effectiveness assessments (ME), and re-attack recommendations (RR).
2. From Combat Ops: initial BDA from aircrew debriefs and mission reports.

Process:

1. Planners compare and discuss inputs with expected results.
2. Planners discuss discrepancies and wargame various courses of action with advantages and disadvantages to each which will fix the discrepancies. These discrepancies can be either positive or negative. In other words, the combat assessment inputs could be better than the expected results or worse. Each requires a change in strategy. This is accomplished together with the Strategy Development Cell.

Outputs:

1. Determination of success of current employment and targeting strategy to meet each JFACC objective and Measure of Merit (MOM).
2. Determination of effectiveness of tempo and phasing (are objectives being met within their corresponding milestones).

3. Reassessments of JFACC objectives, target priorities, phasing, munitions effectiveness factors, and apportionment/allocation recommendations.

4. Recommended courses of action to fix discrepancies.

Questions to Ask Yourself:

1. Were the JFACC's objectives and Measures of Merit (MOMs) met?

2. Were the tactics and strategies employed effective?

3. Does the campaign need to be transitioned into the next phase?

4. Have outputs been discussed with the Joint Force J-3 personnel responsible for combat assessment?

5. Have all expected outputs been developed? How well (quality)? Were they developed in a timely manner?

6. Have outputs been briefed to appropriate personnel and approved by JFACC? Did JFACC refine or change cell's recommendations? How were these refinements/changes handled?

7. Have outputs been disseminated to all who need them? How do you know (to whom, by what means)?

Use of Self-Assessment Forms

1. The following two forms are to be used by the cell/meeting leader and each member of the cell or meeting to assess performance at the conclusion of each cell/meeting iteration.

2. The first form is a matrix which members are to fill out using the scale in the upper left hand block to rate performance. The second form provides ready access of key information needed to fill out specific assessment items.

Strategy Analysis Cell

ATO _____ Date: _____ Time: _____

SCALE	
5	Outstanding
4	Commendable
3	Satisfactory
2	Moderate opportunity for improvement
1	Significant opportunity for improvement
N/A	Not applicable
U	Unknown

Assessment		When developed or when changed.			
		Products/Outputs			
		Report on determination of success of current strategy to meet JFACC objectives and Measures of Merit			
		Report on determination of effectiveness of tempo and phasing (are objectives being met within their corresponding milestones?).			
		Reassessments of JFACC objectives, target priorities, phasing, munitions effectiveness factors, and apportionment/allocation recommendations.			
		Recommended courses of action to fix discrepancies.			
		A	B	C	D
1	Used available inputs/documents?				
2	Appropriate cells (external/internal) consulted?				
3	Key personnel present? If not, how well did leaders compensate?				
4					
5	Did key personnel provide relevant input? How well did leaders draw out needed input?				
6					
7	Adhered to doctrinal principles?				
8	Sufficiently discussed?				
9	Alternatives addressed?				
10	Differences resolved?				
11	Consistent with Cmdr's guidance?				
12	Timeliness of production?				
13	Outputs coordinated w/Joint Force J-3 Staff?				
14	Quality of product/output?				
15					
16					
17	If JFACC does not approve products, how well were refinements/changes made?				
18	Products/outputs distributed to all appropriate recipients? Yes ___ No ___ System in place to ensure distribution took place?				
19	Overall Assessment of Processes Performed				

Comments:

STRATEGY ANALYSIS CELL

ATO: _____ Date: _____ Time: _____

Assessm't

Scoring Guidance

- 1 Available Inputs/Documents (examples):
 - From Combat Intel:
 - ⇒ Bomb damage assessment (BDA)
 - ⇒ Munitions effectiveness assessments (ME)
 - ⇒ Re-attack recommendations (RR)
 - From Combat Ops:
 - ⇒ Initial BDA from aircrew debriefs and mission reports
- 2 Assess whether the cell members consult with the appropriate cells or personnel if, in the information the cell is working with, there are discrepancies, clarifications needed, etc.
- 3 **Key Personnel:** Operations and intelligence analysts
- 4 Observe whether the cell leaders or members use explicit methods to compensate for the lack of expertise in an area.
- 5 Observe the degree to which experts in an area provide information in their own area of expertise, as appropriate.
- 6 If members are not contributing as they should, observe whether the cell leaders use explicit methods (e.g., asking questions) to elicit the required input.
- 14 **Quality of Product:** Provide a global assessment of the product/output. Consider ratings made in the above assessments in addition to other judgments deemed relevant.

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Row	Add other relevant assessment criterion.
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General

Satisfactory ratings (3) indicate that no mistakes were made and that the expected performance was obtained (i.e., tasking was met). Ratings above satisfactory indicate innovative or creative approaches were observed in the cell members or leaders.

Comments:

Comments:

Section 3 to Appendix D

Self-Assessment Tool for the JFACC Strategy/Guidance Meeting

JFACC Strategy/Guidance Meeting Purpose for Joint Targeting.

1. DGAT presents near-term guidance, apportionment, and targeting recommendations for discussion by participants and JFACC approval. *[JTTO 1]*
2. The Strategy Development Cell presents long-range (3-4 days out) air strategy and targeting priorities recommendations as JFACC inputs to the Joint Targeting Coordination Board (JTCCB) for discussion by participants and JFACC approval. *[JTTO 1]*
3. The Master Attack Plan (MAP) developed by the NGAT during the night is briefed for JFACC approval. The JFACC signs the JFACC Guidance Letter and Apportionment Recommendation.
4. Bottom Line Purpose: for all attendees to understand the JFC's and JFACC's intent.

Inputs:

1. Briefing on current JFC objectives, guidance, and apportionment.
2. Briefing on recommended near-term JFACC objectives, Measures of Merit (MOMs), guidance, apportionment, and targeting recommendations.
3. Briefing on the just completed Master Attack Plan.
4. Briefing on recommended long-range air strategy and targeting priorities.
5. Briefings by components and special purpose cells on their concepts and targeting requirements for future operations.

Process:

1. Participants discuss each briefing topic to ensure complete understanding.

2. The pros and cons to any conflicting views with the recommendations are discussed and resolved if possible.
3. JFACC provides any refinements to the recommendations and any additional guidance, and seeks discussion for clarification on these points.
4. JFACC approves recommendations with any refinements and signs JFACC Guidance Letter and Apportionment Recommendation.

Outputs:

1. JFACC near-term objectives, Measures of Merit (MOMs), guidance, apportionment, and targeting priorities (issued in the form of the JFACC Guidance Letter and Apportionment Recommendation).
2. JFACC long-range (3-4 days out) air strategy and targeting priorities recommendations to the Joint Targeting Coordination Board (JTCB).
3. Commander's intent information on JFC, JFACC, components, and special purpose cell operations for all meeting attendees.

Questions to Ask Yourself:

1. Were key personnel from Combat Ops, Combat Plans, Combat Intel, component liaison cells, and special purpose cells present? If not, are efforts under way to provide them outputs?
2. Did any of the key personnel fail to participate in discussions when appropriate? If so, were efforts made to question them and draw them into discussions?
3. Were all inputs briefed clearly? Do some briefers need advice on this?
4. Were briefings, discussions, and outputs understood by attendees? Were back-briefing type questions asked of attendees to ensure this understanding?
5. Were there any disagreements with outputs? What is being done to resolve these disagreements? Are they such that they will be resolved at a higher level? ...JFACC with component commander? ...at the Joint Targeting Coordination Board?
6. Did the JFACC specifically approve each item with refinements? Was there an opportunity for other attendees to seek clarification after the JFACC left the meeting? If not, how will this clarification be communicated?

Use of Self-Assessment Forms

1. The following two forms are to be used by the cell/meeting leader and each member of the cell or meeting to assess performance at the conclusion of each cell/meeting iteration.
2. The first form is a matrix which members are to fill out using the scale in the upper left hand block to rate performance. The second form provides ready access of key information needed to fill out specific assessment items.

JFACC Strategy/Guidance Meeting

ATO _____ Date: _____ Time: _____

SCALE	
5	Outstanding
4	Commendable
3	Satisfactory
2	Moderate opportunity for improvement
1	Significant opportunity for improvement
N/A	Not applicable
U	Unknown

Assessment		Products/Outputs			When developed or when changed.
		A	B	C	
1	Key personnel present. If not, how well did leaders compensate?				
2	Did key personnel provide relevant input? How well did leaders draw out needed input?				
3	Inputs briefed clearly? Do briefers need advice? Was it given?				
4	Methods used to ensure discussions/ outputs understood by attendees?				
5	If disagreements: how well resolved?				
6	Proper level of resolution chosen?				
7	Opportunities for all attendees to seek clarification of JFACC's decisions?				
8					
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12					
13	If JFACC does not approve products, how well were refinements/changes made?				
14	Products/outputs distributed to all appropriate recipients? <input type="checkbox"/> Yes <input type="checkbox"/> No				
15	System in place to ensure distribution took place?				
Overall Assessment of Processes Performed					

Comments:

JFACC STRATEGY/GUIDANCE MEETING COMMENTS

ATO: _____ Date: _____ Time: _____

Scoring Guidance

Assessm't

Item

- 1 **Key Personnel:** Key attendees include JFACC and staff, key personnel from Combat Plans, Combat
Ops, Combat Intel and component/liaison representatives.
- 2 Observe whether the cell leaders or members use explicit methods to compensate for the lack of
expertise in an area.
- 3 Observe the degree to which experts in an area provide information in their own area of expertise, as
appropriate.
- 4 If members are not contributing as they should, observe whether the cell leaders use explicit methods
(e.g., asking questions) to elicit the required input.
- 7 Observe whether the meeting leader(s) ensured that outputs were understood by attendees. Examples of
“methods” include brief backs and questioning.
- 10 Did leaders explicitly provide opportunities for the attendees to seek clarification (e.g., ask if any one
has questions)?

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Row

General

Add other relevant assessment criterion.

Satisfactory ratings (3) indicate that no mistakes were made and that the expected performance was obtained (i.e., tasking was achieved). Ratings above satisfactory indicate that innovative or creative approaches were observed in the cell members or leaders.

Comments:

Comments:

Section 4 to Appendix D

Self-Assessment Tool for the DGAT

Day Guidance, Apportionment, and Targeting Cell (DGAT) Responsibilities.

1. Developing the daily JFACC's planning guidance and apportionment recommendation based on the Strategy Development Cell's prioritized tasks. It produces the ATO Planning Guidance Letter which details the JFACC's basic daily campaign objectives and includes: the effective period for the ATO; daily assessments, objectives, and priorities of effort; generalized targeting philosophies, objectives, and apportionment and allocation guidance; and guidance for use of critical and specialized assets and planning of specialized operations. *[JTTO 1] [Note: See Section 3 to Appendix D, Performance Measurement Methods for JFACC Strategy/Guidance Meeting]*
2. Finalizing the daily prioritized Joint Target List (JTL), referred to as the Target Nomination List (TNL) in the CENTAF AOC. *[JTTO 2]*

Inputs:

1. Strategic Development Cell's products/outputs (key product is prioritized tasks).
2. Operation Plan Target List Annex (OPLAN JTL). For a given operational area, the OPLAN JTL constitutes a target baseline. OPLAN JTLs are subsets of the national military intelligence integrated data base/integrated data base (MIDS/IDB) modified to meet the joint force requirements in various regions throughout the world. During peacetime, the unified command J2 modifies this database via inputs from both national agencies as well as assigned component forces.
3. Battlespace Geometry Management. Intelligence planners assess the battlespace geometry/restrictions and develop targets based on regional and geographic characteristics.
4. All source national agency support.
5. Enemy military capability studies.
6. Current intelligence assessments.
7. Component target nominations.
8. Joint Targeting Coordination Board inputs to include Restricted Target List and No-Hit List.

9. Existing basic encyclopedia (BE) numbered targets.

Process:

1. The Chief of the Strategy Cell briefs the DGAT's targeting element (located in the Combat Intelligence Division SCIF) on the JFC/JFACC guidance, intent, and targeting priorities by task.
2. Components present their target nominations. For each target, Desired Mean Points of Impact (DMPIs) are selected, and Target Planning Worksheets are generated.
3. The targeting element prioritizes targets within each mission type (OCA, AI, etc.) according to which task they fall under. Additionally, each target is checked against the No-Hit List and Restricted Target List. If the target type or DMPI is on one of these lists, the targeting element contacts the Joint Force J-2 Cell to determine the reason for the restriction, and if necessary to request exception for that target.
4. The Joint Targeting Working Group (JTWG) made up of the targeting element and component representatives reviews the JFAAC's guidance and checks each target to ensure compliance with that guidance. Based on these checks, some targets are thrown out.
5. With participation from representatives of all components, the JTWG in a group effort prioritizes targets within each target type based on JFAAC priority of tasks.
6. The resulting Draft Target Nomination List (TNL) is submitted to the JGAT for approval and subsequent NGAT processing. *[Note: The TNL is referred to as the Joint Integrated Prioritized Target List (JIPTL) at Joint Force levels.]*

Outputs:

1. Target nomination sheets which have been categorized, prioritized, and scrubbed.
2. Draft TNL (Draft JIPTL).
3. Inputs to intelligence collection planning (requests for target information).

Questions to Ask Yourself:

1. Were potential target systems identified? Were any missed?

2. What target intel is needed when? Was this passed to intel collection planners?
3. What are the enemy's critical nodes, their activities, and their functions? Were they nominated as targets? If not, why not?
4. Were all component/special cell reps and all DGAT participants familiar with the JFC's high-value targets (HVTs) and high-payoff targets (HPTs)? Did they all understand the JFC/JFACC guidance, intent, and targeting priorities? How do you know? Did you question each?
5. Were there any disagreements about target nominations being place too low or too high in the priorities within categories? Were these disagreements resolved? If not, at what level can they be resolved? How will this take place? ...by whom? ...when?
6. Have all expected outputs been developed? How well (quality)? Were they developed in a timely manner?
7. Is each output consistent with JFC's guidance and intent?
8. Have outputs been disseminated to all who need them? How do you know (to whom, by what means)?

Use of Self-Assessment Forms

1. The following two forms are to be used by the cell/meeting leader and each member of the cell or meeting to assess performance at the conclusion of each cell/meeting iteration.
2. The first form is a matrix which members are to fill out using the scale in the upper left hand block to rate performance. The second form provides ready access of key information needed to fill out specific assessment items.

DGAT Target Development Cell

ATO _____ Date: _____ Time: _____

SCALE	
5	Outstanding
4	Commendable
3	Satisfactory
2	Moderate opportunity for improvement
1	Significant opportunity for improvement
N/A	Not applicable
U	Unknown

Assessment		When developed or when changed.				
		Products/Outputs				
		A	B	C	D	E
1	Used available inputs/documents?					
2	Appropriate cells (external/internal) consulted?					
3	Key personnel present? If not, how well did leaders compensate?					
4						
5	Did key personnel provide relevant input? How well did leaders draw out needed input?					
6						
7	Adhered to doctrinal principles?					
8	Sufficiently discussed?					
9	Alternatives addressed?					
10	Differences resolved?					
11	Determined what intel needed? Was requested?					
12						
13	Enemy's critical nodes, activities, functions targeted?					
14	Understand JFC's guidance, intent, priorities?					
15	Understand JFC's HVTs and HPTs?					
16	If disagreements: How well resolved?					
17	Proper level of resolution?					
18	Consistent with Cmdr's guidance?					
19	Timeliness of production?					
20	Quality of product/output?					
21						
22	If JFACC does not approve products, how well were refinements/changes made?					
23	Products/outputs distributed to all appropriate recipients? ___ Yes ___ No System in place to ensure distribution took place?					
24	Overall Assessment of Processes Performed					

DAY GUIDANCE, APPORTIONMENT, AND TARGETING (DGAT) CELL

ATO: _____ Date: _____ Time: _____

Assessm't
Item

Scoring Guidance

- | | | |
|------------------|--|--|
| 1 | Available Inputs/Documents (examples): <ul style="list-style-type: none"> • From Strategy Development Cell: <ul style="list-style-type: none"> ⇒ Prioritized JFACC objectives or tasks ⇒ Measures of Merit (MOMs) ⇒ JFACC priorities of effort and generalized targeting priorities and philosophies ⇒ Long-range (3-4 days out) strategy by campaign phase ⇒ Short-range (2-3 days out) strategy by campaign phase ⇒ Apportionment and allocation guidance ⇒ Guidance for use of critical and specialized assets | <ul style="list-style-type: none"> • JFC OPLAN: <ul style="list-style-type: none"> ⇒ OPLAN Joint Target List Annex • Intel Sources: <ul style="list-style-type: none"> ⇒ Battlespace geometry information ⇒ All source national agency support information ⇒ Current intel assessments • From Components: <ul style="list-style-type: none"> ⇒ Component target nominations • From JTCB: <ul style="list-style-type: none"> ⇒ Late breaking guidance • From Basic Encyclopedia: <ul style="list-style-type: none"> ⇒ Existing numbered targets |
| 2 | Assess whether the cell members consult with the appropriate cells or personnel if, in the information the cell is working with, there are discrepancies, clarifications needed, etc. | |
| 3 | Key Personnel: Planners from Combat Plans, Combat Intelligence and component representatives. | |
| 4 | Observe whether the cell leaders or members use explicit methods to compensate for the lack of expertise in an area. | |
| 5 | Observe the degree to which experts in an area provide information in <u>their own</u> area of expertise, as appropriate. | |
| 6 | If members are not contributing as they should, observe whether the cell leaders use explicit methods (e.g., asking questions) to elicit the required input. | |
| 20 | Quality of Product: Provide a global assessment of the product/output. Consider ratings made in the above assessments in addition to other judgments deemed relevant. | |
| Blank Row | Add other relevant assessment criterion. | |
| General | Satisfactory ratings (3) indicate that no mistakes were made and that the expected performance was obtained (i.e., tasking was met). Ratings above satisfactory indicate innovative or creative approaches were observed in the cell members or leaders. | |

Comments:

Section 5 to Appendix D

Self-Assessment Tool for the JGAT Meeting

JGAT (Joint Guidance, Apportionment, and Targeting) Meeting's Purpose for Joint Targeting. *[Note: The JGAT Meeting is held at approximately 1500 hours, and is attended by O-6/O-5/O-4 level planners from Combat Plans, Combat Intelligence, and the components.]*

1. The major purpose of the meeting is to make final refinements to the Draft TNL received from the DGAT and to submit it to the JFACC at his afternoon update (approximately 1700). The JFACC may require further refinements to be made prior to forwarding the TNL to the NGAT. *[JTTO 2]*
2. The other major purpose of this meeting is for the Strategy Development Cell to present the long-range (3-4 days out) air strategy for discussion and refinement by the JGAT personnel prior to presenting it to the JFACC for approval at his afternoon update (approximately 1700). *[JTTO 1] [Note: See Section 1 to Appendix D, Performance Measurement Methods for the Strategy Development Cell.]*

Inputs:

1. Briefing on JFC/JFACC objectives, guidance, and targeting priorities.
2. Draft TNL and briefing on how and why target nominations fall where they do.

Process:

1. Senior leaders from Combat Plans, Combat Intel, the component reps, and special purpose cells discuss targeting strategies and placement of target nominations on the Draft TNL and attempt to arbitrate any conflicts.
2. Based on discussions, the refinements are made to the Draft TNL to be submitted to the JFACC at his afternoon update.

Outputs:

1. Scrubbed Draft TNL.
2. Information explaining how and why target nominations appear on the TNL where

they do for component and special purpose cell reps to communicate to their higher headquarters.

Questions to Ask Yourself:

1. Were key personnel from Combat Ops, Combat Plans, Combat Intel, component liaison cells, and special purpose cells present? If not, are efforts under way to provide them outputs?
2. Did any of the key personnel fail to participate in discussions when appropriate? If so, were efforts made to question them and draw them into discussions?
3. Were all inputs briefed clearly? Do some briefers need advice on this?
4. Were briefings, discussions, and outputs understood by attendees? Were back-briefing type questions asked of attendees to ensure this understanding?
5. Were there any disagreements with outputs? What is being done to resolve these disagreements? Are they such that they will be resolved at a higher level? ...JFACC? ...JFACC with component commander? ...at the Joint Targeting Coordination Board?
6. Bottom Line Question: are the target nominations prioritized in accordance with JFC and JFACC targeting priorities and overall operational intent?

Use of Self-Assessment Forms

1. The following two forms are to be used by the cell/meeting leader and each member of the cell or meeting to assess performance at the conclusion of each cell/meeting iteration.
2. The first form is a matrix which members are to fill out using the scale in the upper left hand block to rate performance. The second form provides ready access of key information needed to fill out specific assessment items.

Joint Guidance, Apportionment, and Targeting (JGAT) Meeting

ATO _____ Date: _____ Time: _____

SCALE	
5	Outstanding
4	Commendable
3	Satisfactory
2	Moderate opportunity for improvement
1	Significant opportunity for improvement
N/A	Not applicable
U	Unknown

Date:
Time:

SCALE

Understanding
Commendable
Satisfactory
Moderate opportunity for improvement
Significant opportunity for improvement
Not applicable
Unknown

Products/Outputs

Approved Draft Joint Integrated Prioritized Target List (JIPTL).
Explanations of how and why target nominations appear on the JIPTL where they do.
Combat assessment and refined long-range air strategy when necessary.

Assessment

A
B
C

1	Key personnel present? If not, how			
2	well did leaders compensate?			
3	Did key personnel provide relevant			
4	input? How well did leaders draw			
5	out needed input?			
6	Inputs briefed clearly? Do briefers need			
7	advice? Was it given?			
8	Methods used to ensure discussions/			
9	outputs understood by attendees?			
10	If disagreements:			
11	How well resolved?			
12	Proper level of resolution chosen?			
13	Opportunities for all attendees to seek			
14	clarification of Plans Chief's decisions?			
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ATO: _____ Date: _____ Time: _____

Scoring Guidance

- 1 **Key Personnel;** Key attendees are 0-6/0-5/0-4 level planners from Combat Plans, Combat Intelligence, and the components.
- 2 Observe whether the cell leaders or members use explicit methods to compensate for the lack of expertise in an area.
- 3 Observe the degree to which experts in an area provide information in their own area of expertise, as appropriate.
- 4 If members are not contributing as they should, observe whether the cell leaders use explicit methods (e.g., asking questions) to elicit the required input.
- 7 Observe whether the meeting leader(s) ensured that outputs were understood by attendees. Examples of “methods” include brief backs and questioning.
- 10 Did leaders explicitly provide opportunities for the attendees to seek clarification (e.g., ask if any one has questions)?

[illegible]

General Satisfactory ratings (3) indicate that no mistakes were made and that the expected performance was obtained (i.e., tasking was achieved). Ratings above satisfactory indicate that innovative or creative approaches were observed in the cell members or leaders.

Comments:

Comments.

Section 6 to Appendix D

Self-Assessment Tool for the NGAT Cell

Night Guidance, Apportionment, and Targeting Cell (NGAT) Responsibilities.

1. Accomplish weaponeering assessment for each target nomination sheet on the Target Nomination List (TNL). *[Note: The TNL is referred to as the Joint Integrated Prioritized Target List (JIPTL) at Joint Force levels.] [JTTO 3]*
2. Develop the Master Attack Plan (MAP). *[JTTO 4]*
3. Begin ATO Production. *[JTTO 5]*

Inputs:

1. The JFC's/JFACC's guidance, apportionment, and the targeting strategy used in developing the TNL.
2. The TNL.

Process:

1. Developing the Master Attack Plan (MAP) is an iterative process involving constant revision as planners work all of the various operational planning considerations into the plan. The steps of the process shown below represent a general sequence or flow of tasks. However, continuous revisions are necessary and will involve the repetition of certain steps, **which may be out of sequence with what is shown below.**

Step 1. The NGAT begins its work with a review of the JFAAC's guidance and the targeting strategy used in developing the TNL.

Step 2. The targeteers from Combat Intelligence accomplish target weaponeering by developing Desired Mean Points of Impact (DMPIs) for each target. To assist them in this process, they use the Rapid Application of Air Power (RAAP) computer program, which is one of the applications in the Contingency Theater Automated Planning System (CTAPS). With that and the Joint Munitions Effectiveness Manuals (JMEM), DMPIs with weaponeering options (type of aircraft plus bomb loads) that accomplish the desired level of damage or destruction are determined for each target. As much flexibility as possible is developed for each target, with weaponeers trying to give as many options for weapons and type aircraft required as possible. For example, a target might have 3 desired mean points of impact using bomb type X or 1 DMPI using bomb type Y; or the nature of the target might be such that it requires a specific type of

aircraft to deliver the proper amount of destruction. In any case, the purpose of weaponeering is to provide an analysis of the best weapon combination for an economy of force, or the "best bang for the buck." Weaponeers also quantify expected results of the weapons (lethal or nonlethal) against each target, producing a probability of damage (PD).

Step 3. The NGAT applies the JFC's apportionment guidance to the TNL. Apportionment is normally stated as a percentage of available air assets, but may be reflected as number of sorties. However stated, apportionment percentages or numbers should contain a "plus-or-minus" component to give planners flexibility (not tie them to exact numbers). For example, apportionment by number of sorties might be stated: "OCA=250, DCA=100, AI=600, CAS=300; plus or minus 10 sorties." Experienced NGAT planners will ensure that all assets are spread among target types according to the guidance. They must take care that multi-purpose aircraft (e.g., F-16s) are not fully tasked for OCA or AI missions, but are also used for CAS and Defensive Counter Air (DCA) missions if needed. At some point when all assets have been committed, a "cut-off line" is made for each target type, and more detailed weaponeering is accomplished for each target above the cut-off and for the first 5 targets just below the line. As the MAP iterative process is worked, some of the targets above the line may drop out, and some below may be pulled up. Those targets that do not make the cut on this ATO will be worked into the next ATO.

Step 4. Next the true "art" of developing an ATO begins. Each of the targets with their desired mean points of impact (DMPs) are plotted on a map board. The NGAT operations experts then draw circles around groups of targets that can be "packaged" and attacked by a large single force of aircraft. By packaging targets together, the attacking aircraft can take advantage of mutual support with one another and optimize the effectiveness of electronic support aircraft (e.g., radar jammers, Wild Weasels) and DCA aircraft. This packaging is first accomplished without regard to which targets have the higher priorities. Packages are based on the geographic locations of the targets, so a typical package will contain a mix of high and low priority targets. It is common in this process to find an isolated target that is at a distance and direction too far apart from any other targets to logically place it into a package (a target outside the circles). NGAT planners must then determine the priority of that target, and if extremely high, they will try to find a source not requiring mutual support. However, high priority targets may go unserved during this particular ATO execution, because the target requires too many assets in relation to its value. The rationale for dropping these targets will be explained to the JFACC at his morning briefing and then worked into the next ATO.

Step 5. Aircraft types are assigned to each package and the targets within each package. Although not a hard and fast rule, planners try not to mix assigned aircraft by type or service or nation. For some packages, this may not be possible, and liaison personnel work with the planners to ensure that all the information necessary to coordinate the mixed attack package is contained in the ATO SPINS (Special Instructions, the "remarks section" of the ATO). Also, a running "bean count" of aircraft type is kept; for example, "we just ran out of F-15Es." This may cause a reworking of the packages.

Step 6. Concurrent with the properly servicing of targets and assigning of aircraft type to ensure that all assets are effectively used, the NGAT sequences the packages into an order that makes tactical sense. For example, a package that targets SAM sites would be flown before the package that hits the targets that the SAMs are protecting. Sequencing may cause planners to rework their target packaging. Eventually, through many iterations, all available aircraft are scheduled. During this time special missions and reconnaissance missions are built into the flow.

Step 7. Airspace planners are busy with the Airspace Control Plan. With the Master Attack Plan process nearing completion, they know *who* needs to go *where* in the airspace and can build the appropriate airspace control measures (routes, etc.) to make it all flow together. Similarly, the communications plan for airborne assets is also done at this time.

Step 8. As dawn approaches, the MAP, the DCA plan, the airspace control plan, and the communication plan are finalized, and the MAP is briefed to the JFACC. With his approval, the MAP is handed off to the ATO Production Team.

2. ATO Production Team. As yet, no units have been tasked. If possible, the units receive the MAP at the same time the ATO Production Team receives it, so that the units can get an initial look at their possible taskings and can start their own planning process. However, it is the ATO Production Team that takes the MAP from the NGAT and produces the ATO which assigns units their missions. ATO planners use the Advanced Planning System (another application of CTAPS) to marry up MAP information with aircraft unit scheduling, tanker requirements, and airlift requirements. Whenever possible, ATO planners are on line to the units while building the ATO to ensure the units understand the taskings they are about to receive. The questions the planner receives from the unit often prompt additional SPINS that are added to the end of the ATO to clarify the intent of certain taskings or provide required extra information. Concurrently, airspace planners produce the Airspace Control Order (ACO) for that ATO. Once the ATO and ACO receive their final review by the Director of Combat Plans, they are transmitted to the units. This normally occurs 12 hours prior to the first time-on-target for that ATO. Also, at that time, the ATO is handed over to the Combat Operations side of the AOC so they can prepare for transition from the previous ATO.

Outputs:

1. The Master Attack Plan (MAP) which is the ATO "shell" for air operations.
2. Targets above and below the "cut-off line" that for one reason or another did not make it into the MAP. These targets will be nominated for the next ATO.

Questions to Ask Yourself:

1. How much flexibility are weaponeers giving to each target nomination sheet? Is this being stressed? Do they understand why?
2. Are weaponeers proficient in RAAP and JMEMs procedures? How can you tell?
3. Are DMPs plotted correctly on the situation map? Is there some way of differentiating targeting priorities among the DMPs?
4. Are groups of targets packaged in accordance with sound tactics?
5. Are packages properly sequenced?
6. Are there any isolated targets that do not fit into force packages? What's the priority of these targets? Can they be attacked with other component resources? Have other component reps been involved in the decision making? If these isolated targets cannot be attacked with other resources, are they of sufficiently high priority to justify risk or to pull large force away from packages with many targets? Will any exceptions be explained to JFACC?
7. Are aircraft by type being over-tasked or mis-utilized?
8. Is the decision that the MAP is "good enough" made in a timely manner, or is it made too late, causing lack of time for other important ATO production processes.

Use of Self-Assessment Forms

1. The following two forms are to be used by the cell/meeting leader and each member of the cell or meeting to assess performance at the conclusion of each cell/meeting iteration.
2. The first form is a matrix which members are to fill out using the scale in the upper left hand block to rate performance. The second form provides ready access of key information needed to fill out specific assessment items.

Night Guidance, Apportionment, and Targeting (NGAT) Cell

ATO _____ Date: _____ Time: _____

SCALE	
5	Outstanding
4	Commendable
3	Satisfactory
2	Moderate opportunity for improvement
1	Significant opportunity for improvement
N/A	Not applicable
U	Unknown

Products/Outputs	
The Master Air Attack Plan (MAAP), the ATO "shelf" for air operations.	
Targets above and below the "cut-off" line that did not make it into the MAAP.	

Assessment		A	B
1	Used available inputs/documents?		
2	Appropriate cells (external/internal) consulted?		
3	Key personnel present (esp. weapons & tactics officers)?		
4	If not, how well did leaders compensate?		
5	Did key personnel provide relevant input? How well		
6	did leaders draw out needed input?		
7	Adhered to doctrinal principles?		
8	Alternatives addressed?		
9	Differences resolved?		
10	To what degree are weaponeers providing enough flexibility to each target nomination sheet?		
11	To what degree are weaponeers proficient in Rapid Air Attack Plan and JMEMs' procedures?		
12	How well are DMPs plotted on the situation map?		
13	Does method for differentiating target priorities work?		
14	How well are groups of target packaged in accordance with sound tactics?		
15	How well are packages properly sequenced?		
16	Isolated targets properly addressed?		
17	Those not attacked put into next ATO?		
18	Sufficient justification for leaving targets out?		
19	Decision that the MAAP is good enough made in a timely manner?		
20	Are aircraft by type being over-tasked or misutilized?		
21	Consistent with JFC and JFACC guidance and intent?		
22	Quality of product/output?		
23			
24	If JFACC does not approve products, how well were refinements/changes made?		
25	Products/outputs distributed to all appropriate recipients? ___ Yes ___ No System in place to ensure distribution took place?		
26	Overall Assessment of Processes Performed		

Comments:

NIGHT GUIDANCE, APPORTIONMENT, AND TARGETING (NGAT) CELL COMMENTS

ATO: _____ Date: _____ Time: _____

Assessm't
Item

Scoring Guidance

- | | | |
|----------------|--|---|
| 1 | Available Inputs/Documents (examples): <ul style="list-style-type: none"> • From Strategy Development Cell: ⇒ Prioritized JFACC objectives or tasks ⇒ Measures of Merit (MOMs) ⇒ JFACC priorities of effort and generalized targeting priorities and philosophies ⇒ Long-range (3-4 days out) strategy by campaign phase ⇒ Short-range (2-3 days out) strategy by campaign phase ⇒ Apportionment and allocation guidance ⇒ Guidance for use of critical and specialized assets | <ul style="list-style-type: none"> • From DGAT ⇒ Target nomination sheets which have been categorized, prioritized, and scrubbed ⇒ Draft JIPTL ⇒ Restricted targets list and no-hit list ⇒ Intelligence preparation of the battlefield event template ⇒ Established Target Selection Standards |
| 2 | Assess whether the cell members consult with the appropriate cells or personnel if, in the information the cell is working with, there are discrepancies, clarifications needed, etc. | |
| 3 | Key Personnel: <ul style="list-style-type: none"> • Combat Plans • Combat Intelligence • Weapons and Tactics Officers (KEY) <ul style="list-style-type: none"> • Current in available USAF, USMC, USN and coalition fighter aircraft • Electronic warfare officers <ul style="list-style-type: none"> • Current in electronic combat (EC) | <ul style="list-style-type: none"> • Component specialists <ul style="list-style-type: none"> • Battlefield Coordination Detachment (BCD) personnel • Special Operations Forces (SOF) experts • Targeteers • Intel specialists |
| 4 | Observe whether the cell leaders or members use explicit methods to compensate for the lack of expertise in an area. | |
| 5 | Observe the degree to which experts in an area provide information in <u>their own</u> area of expertise, as appropriate. | |
| 6 | If members are not contributing as they should, observe whether the cell leaders use explicit methods (e.g., asking questions) to elicit the required input. | |
| 22 | Quality of Product: Provide a global assessment of the product/output. Consider ratings made in the above assessments in addition to other judgments deemed relevant. | |
| General | Satisfactory ratings (3) indicate that no mistakes were made and that the expected performance was obtained (i.e., tasking was met). Ratings above satisfactory indicate innovative or creative approaches were observed in the cell members or leaders. | |

Comments: _____

Appendix E

References

- Joint Pub 3-09, "Joint Fire Support"
- Joint Pub 3-56.1, "Command and Control for Joint Air Operations"
- Universal Joint Task List
- Joint Task Force Headquarters Mission Training Plan
- Army Research Institute sponsored BDM Product, "Analysis of the Function to Coordinate, Synchronize, and Integrate Joint Fires as Accomplished by an Army Corps Acting as a Joint Task Force," dated 15 Dec 96
- Air Land Sea Application Center's "Responsive Air Support Plan"
- Air Land Sea Application Center's "The Joint Targeting Process and Procedures for Targeting Time-Critical Targets" Draft
- Air Combat Command Regulation 2-1, "Air Operations"
- Air Combat Command Pamphlet 50-54 (same as Army Field Manual 100-103-2), "Theater Air-Ground System"
- USAF Deputy Chief of Staff, Plans and Operations, Pamphlet, "JFACC Primer"
- Air Ground Operations School's "Joint Air Operations Staff Course Student Volumes 1-8"
- USCENTAF Instruction 10-105, "Air Operations Center Organization and Functions"
- USCENTAF CONOPS, "Combat Assessment Concept of Operations"
- Third U.S. Army/Army Forces Central Command (ARCENT) "Standing Operating Procedure (SOP) for the Deep Operations Cell" Draft
- USAF Battlestaff Training School's "Blue Flag Lessons Learned Synopsis"

Appendix F

Glossary

A

A2/C2	Army Airspace Command and Control
AADC	Area Air Defense Commander
AAR	After Action Review
ABCCC	Airborne Battlefield Command and Control Center
ACA	Airspace Control Authority
ACA	Airspace Coordination Area
ACC	Air Component Commander
ACO	Airspace Control Order
ACP	Airspace Control Plan
ACP	Ammunition Control Point
ADA	Air Defense Artillery
ADIZ	Air Defense Identification Zone
ADOCS	Automated Deep Operations Coordination System
ADS	Airspace Deconfliction System
AETACS	Airborne Elements of the Theater Air Control System
AFFOR	Air Force Forces
AGM	Attack Guidance Matrix
AI	Air Interdiction
ALO	Air Liaison Office
ANGLCO	Air and Naval Gunfire Liaison Company
AO	Area of Operations
AOC	Air Operations Center
AOR	Area of Responsibility
APS	Advanced Planning System
ASOC	Air Support Operations Center

ATACMS	Army Tactical Missile System
ATO	Air Tasking Order
AWACS	Airborne Warning and Control System

B

BCD	Battlefield Coordination Detachment
BDA	Battle Damage Assessment

C

C2	Command and Control
C2W	Command and Control Warfare
C3	Command, Control, and Communications
C3CM	Command, Control, and Communications Counter-Measures
C4	Command, Control, Communications, and Computers
C4I	Command, Control, Communications, Computers, and Intelligence
CA	Combat Assessment
CAS	Close Air Support
CCIR	Commander's Critical intelligence Requirements
CIC	Combat Intelligence Center
CJTF	Commander, Joint Task Force
COA	Course of Action
COMINT	Communications Intelligence
COMSEC	Communications Security
CP	Command Post
CSR	Controlled Supply Rate
CTAPS	Contingency Theater Automated Planning System

D

DASC	Direct Air Support Center
DASC(A)	Direct Air Support Center (Airborne)
DCA	Defensive Counter-Air
DCAOC	Defense Communications Agency Operations Center
DEFCON	Defense Condition
DGAT	Day Guidance, Apportionment, and Targeting
DGZ	Designated Ground Zero
DMPI	Desired Mean Point of Impact
DOCC	Deep Operations Coordination Cell
DOD	Department of Defense
DS	Direct Support
DST	Decision Support Template
DSU	Direct Support Unit

E

ECM	Electronic Counter-Measures
EEFIR	Essential Elements of Friendly Information Requirements
EEL	Essential Elements of Information
ELINT	Electronic Intelligence
EOB	Electronic Order of Battle
EW	Electronic Warfare
EWO	Electronic Warfare Officer

F

FA	Field Artillery
FAC	Forward Air Controller
FAC-A	Forward Air Controller (Airborne)
FASCAM	Family of Scatterable Mines

FFA	Free Fire Area
FFIR	Friendly Forces Information Requirements
FLOT	Forward Line of Own Troops
FSCC	Fire Support Coordination Center
FSCL	Fire Support Coordination Line
FSCM	Fire Support Coordination Measure
FSCOORD	Fire Support Coordinator
FSE	Fire Support Element

G

GAT	Guidance, Apportionment, and Targeting
GPS	Global Positioning System

H

HIDACZ	High Density Airspace Control Zone
HUMINT	Human Intelligence
HPT	High Payoff Target
HP TL	High Payoff Target List
HQ	Headquarters
HVT	High Value Target
HVTL	High Value Target List

I

IFF	Identification Friend or Foe
INFLTREP	In-Flight Report
IIR	Intelligence Information Reports
IMINT	Imagery Intelligence
INTREP	Intelligence Report
INTSUM	Intelligence Summary

IPB Intelligence Preparation of the Battlefield

J

JAAT	Joint Air Attack Team
JAOC	Joint Air Operations Center
JCCC	Joint Communications Control Center
JCS	Joint Chiefs of Staff
JDSS	JFACC Decision Support System
JFACC	Joint Force Air Component Commander
JFC	Joint Force Commander
JFFC	Joint Force Fires Coordinator
JFFC-E	Joint Force Fires Coordination Element
JFLCC	Joint Force Land Component Commander
JFMCC	Joint Force Maritime Component Commander
JFMDC	Joint Force Missile Defense Coordinator
JFSOFC	Joint Force Special Operations Forces Commander
JGAT	Joint Guidance, Apportionment, and Targeting
JIC	Joint Intelligence Center
JIPTL	Joint Integrated Prioritized Target List
JMDT2	Joint and Multi-Service Distributed Training Testbed
JMEM	Joint Munitions Effectiveness Manual
JOA	Joint Operations Area
JPOTF	Joint Political Operations Task Force
JPT	Joint Planning Tool (also referred to as JFACC Planning Tool)
JRAC	Joint Rear Area Coordinator
JRTOC	Joint Rear Tactical Operations Center
JSTARS	Joint Surveillance Target Attack Radar System
JRCC	Joint Rescue Coordination Center

JSEAD	Joint Suppression of Enemy Air Defenses
JSOTF	Joint Special Operations Task Force
JSRC	Joint Search and Rescue Center
JTCB	Joint Targeting Coordination Board
JTF	Joint Task Force
JTIDS	Joint Tactical Information Distribution System
JTL	Joint Target List
JTTP	Joint Tactics, Techniques, and Procedures

L

LANTIRN	Low Altitude Navigation and Targeting for Night
LCC	Land Component Commander
LGB	Laser Guided Bomb
LNO	Liaison Officer
LOAC	Law of Armed Combat
LOC	Line of Communication
LRSU	Long Range Surveillance Unit

M

MAAP	Master Air Attack Plan (also MAP - Master Attack Plan)
MAGTAF	Marine Air-Ground Task Force
METT-T	Mission, Enemy, Troops Available, Terrain (w/weather), and Time Available
MIJI	Meaconnoing, Intrusion, Jamming, and Interference
MISREP	Mission Report
MLRS	Mobile Launch Rocket System
MRR	Minimum Risk Route
MSC	Major Subordinate Command
MSR	Main Supply Route

MTP Mission Training Plan

N

NAI Named Area of Interest

NALO Naval Liaison Officer

NCA National Command Authority (President and Secretary of Defense)

NCO Non-Commissioned Officer

NFA No Fire Area

NGAT Night Guidance, Apportionment, and Targeting

NGFS Naval Gunfire Support

NSF Naval Surface Fires

O

OB Order of Battle

OCA Offensive Counter Air

OPCOM Operational Command

OPCON Operational Control

OPLAN Operations Plan

OPORD Operations Order

P

PGM Precision Guided Munition

POL Petroleum, Oils, and Lubricants

POLAD Political Advisor

PSYOPS Psychological Operations

PSYWAR Psychological Warfare

PW Prisoner of War (also referred to as POW)

R

RAP	Recognized Air Picture
RFA	Restricted Fire Area
RFI	Request for Information
RFL	Restricted Fire Line
RII	Request for Intelligence Information
ROE	Rules of Engagement
ROZ	Restricted Operations Zone
RSTA	Reconnaissance, Surveillance, and Target Acquisition

S

SA	Strategic Attack
SACC	Supporting Arms Coordination Center
SADARM	Search and Destroy Armor Munitions
SAM	Surface-to-Air Missile
SAR	Search and Rescue
SCI	Sensitive Compartmentalized Information
SCIF	Sensitive Compartmentalized Information Facility
SEAD	Suppression of Enemy Air Defense
SEMA	Special Electronic Mission Aircraft
SHORAD	Short Range Air Defense
SIGINT	Signals Intelligence
SITREP	Situation Report
SOF	Special Operations Forces
SOLE	Special Operations Liaison Element
SPINS	Special Instructions

T

TACC	Tactical Air Control Center (USMC/USN term)
TACFIRE	Tactical Fire Direction System

TACON	Tactical Control
TACP	Tactical Air Control Party
TACSAT	Tactical Satellite
TADIL	Tactical Data Link
TARN	Tactical Air Request Net
TCF	Tactical Combat Force
TCT	Time-Critical Target
TDC	Track Data Coordinator
TIRS	Terrain Index Reference System
TLAM	Tomahawk Land Attack Missile
TMD	Theater Missile Defense
TMD	Tactical Mission Data
TNL	Target Nomination List
TOO	Target of Opportunity
TOT	Time-on-Target
TPFDD	Time Phased Force Deployment Data
TRP	Target Reference Point
TRS	Target Reference System
TTP	Tactics, Techniques, and Procedures
TTT	Time-to-Target
TVA	Target Value Analysis
U	
UAV	Unmanned Aerial Vehicle
UHF	Ultra-High Frequency
UJTL	Universal Joint Task List
USMTF	United States Message Text Format
USTRANSCOM	United States Transportation Command

UTM Universal Transmercator

V

VHF Very-High Frequency

W

WAM Wide Area Munition

WEZ Weapons Engagement Zone

WGS World Grid System

WIA Wounded in Action

WMD Weapons of Mass Destruction

WOC Wing Operations Center